San Diego County Operational Area Hazardous Materials Area Plan 2011

San Diego County Operational Area
2011 Hazardous Materials Area Plan

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http://www.sdcounty.ca.gov/oes/emergency_management/protected/docs

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Section D	Unified San Diego County Emergency Services Organization HIRT Program and Fifth Amended Emergency Services Agreement
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Section F	Major Transportation Routes Within San Diego County
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H	DEH- ER Assignment and Selection of After Hours Staff
I	HIRT Incident Reports and Site Safety
J	HIRT Training Matrix and Equipment/Manipulative Training Tracker
K	NFPA 471, 472, 473, 1991, 1992, 1993 http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=471&cookie%5Ftest=1
L	Hazardous Materials Medical Management Protocols (2nd Edition)
M	Bi-National Hazardous Materials Prevention and Emergency Response Plan

2011 SAN DIEGO COUNTY OPERATIONAL AREA HAZARDOUS MATERIALS AREA PLAN

INTRODUCTION

The San Diego County Operational Area Hazardous Materials Area Plan (Area Plan) describes the system currently being used within the County of San Diego for managing hazardous materials emergencies. The Area Plan has been prepared pursuant to Division 20 Chapter 6.95 (Section 25503) of the California Health and Safety Code and in accordance with Title 19 of the California Code of Regulations. All procedures described in this plan have been implemented to include Sections 2722-2728 CCR Title 19 and are noted on the Optional Model Reporting Form. The San Diego County Department of Environmental Health (DEH), Hazardous Materials Division (HMD) is the administering agency for the Area Plan and was assisted in its preparation by the San Diego County Office of Emergency Services (OES) and the City of San Diego Fire-Rescue Department (SDFD).

The activities carried out by the HMD, Hazardous Materials Incident Response Team (HIRT), and the San Diego County Office of Emergency Services (OES) to effectively manage hazardous materials emergencies are coordinated, in part, through the Area Plan. This document also references information covering hazardous substance inventories and emergency response spill planning received from regulated businesses, community groups and the U.S. Coast Guard which also are integrated into this Area Plan and the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan.

The Area Plan is designed to integrate the operational activities of San Diego County's Emergency Services Organization, Hazardous Incident Response Team (HIRT) into the on-scene operational procedures for the local, State or Federal agency who have primary responsibility for a hazardous chemical emergency in the jurisdiction.

THE HAZARDOUS MATERIALS DIVISION

The San Diego County Hazardous Materials Division (HMD) is the administering agency for the California Health and Safety Code (HSC) Chapter 6.95, hazardous materials release response plans and inventory, and the California Code of Regulations, Title 19. As the Certified Unified Program Agency (CUPA), the HMD has overall responsibility for the Business Plan Program, the Risk Management Plan Program, the Area Plan, and Community-Right-to-Know and Chemical Emergency Response Services. As the sole CUPA (effective July 1, 1996) in San Diego county, the HMD is also the lead regulatory agency in the county for conducting inspection activities related to hazardous waste generators (HSC Chapters 6.5), hazardous and acutely hazardous materials users, (HSC Chapter 6.95, Articles 1 & 2), underground storage of hazardous materials (HSC Chapter 6.7), and medical waste generators (HSC Chapter 6.1).

In 1989, the San Diego County Board of Supervisors adopted an ordinance establishing a medical waste management program-the first program of its kind in California. Currently the HMD conducts inspections of medical waste generators and requires the generators to prepare a Medical Waste Management Plan.

The HMD also provides hazardous materials emergency response services in a coordinated effort with the SDFD. These activities are conducted countywide under a Joint Powers Agreement (JPA), of which all of the cities in the County of San Diego are members.

CUPA Program

The CUPA Program enforces the California Health and Safety Code (HSC)
Chapters 6.1 (Medical Waste Management), 6.5 (Hazardous Waste Generators), 6.7 (Underground Storage of Hazardous Substances), and 6.95 (Business Plans).

The HMD enforcement of HSC Chapter 6.95 (CCR Title 19) requires businesses obtain a permit for the following activities:

- Storage of hazardous materials in quantities greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet.
- Storage of specified quantities of Acutely Hazardous Materials above Threshold Planning Quantities.

The CUPA Program also incorporates the requirements of California Health and Safety Code, Section 25503(e) (1). As part of the Program, staff will regularly inspect permitted businesses and gather information regarding inventory, emergency response and employee training.

The HMD was created in 1981 to provide a regional program to regulate the use and disposal of hazardous materials and waste. The HMD has grown from a single-person unit in 1981 to a program which now has approximately 50 professional staff. As of the fiscal year 2009-10, the HMD regulated approximately 13,850 facilities required to comply with one or more of six CUPA program elements.

DATA MANAGEMENT SYSTEM

The HMD has developed a computerized system to manage data submitted by businesses and collected during on-site waste generator and/or community right-to-know inspections of permitted businesses. This data management system is used to store business-specific information, such as hazardous materials inventory, waste generation information, underground hazard materials storage and site maps. The system also stores emergency contact information, generates inspection records, notices of violation, billing and fees, and compiles information for various reports.

Output reports include the First Responder Hazardous Materials Business Plan (FRHMBP), which are specialized summaries of hazardous materials inventories and detailed site maps of all businesses that contain hazardous materials. The FRHMBP is designed to easily keep responding personnel aware of the chemical hazards within businesses in their jurisdiction. It also serves as an aid in conducting informed hazard and risk analysis during chemical emergencies.

FRHMBP reports and electronic information are provided in a comprehensive secure database on a CD to all fire agencies in the region, and updated each month.
Electronic versions are kept at HMD headquarters and on each HIRT vehicle. Emergency response personnel on the HIRT vehicles are able to access additional information using onboard computers and cellular modems. Limited, non-confidential data concerning businesses are also available on the DEH website.

As part of a County enterprise IT project, DEH-HMD is transitioning from the existing data management system to a web-based system which will interface with an electronic document management system and a Geographic Information Systems (GIS). This new permit system will be operational in late 2011 and will collect, process, and report all CUPA required data. When

operational, CUPA/DEH-HMD hazardous materials permit information will be available online to the public and to stakeholders. More secure access to specific hazardous materials storage, handling and emergency response information will be accessible to fire agencies and first responders.

One component of the GIS data set includes the Consequences Assessment Tool Set (CATS) provided by Science Applications International Corporation (SAIC). CATS software assesses the consequences of technological and natural disasters to population, resources, and infrastructure. It is a user-friendly software package for the PC which combines state-of-the-art hazard and consequence prediction, digital, and GIs information within an easy-to-use Graphical Interface, and is available on HIRT vehicles for use during chemical emergencies or in the County of San Diego's Emergency Operations Center.

In addition to the current hazardous materials storage and handling inventory information maintained by DEH-HMD for first responders, a duplicate of that data is routinely provided to the California Poison Control System – San Diego Division on CD-ROM on a monthly basis. This information is available 24 hours per day for use by emergency response and medical personnel.

DEH and the Poison Control System use the Micromedix's Database (Chemknowledge®). The Chemknowledge® database provides the response agencies with critical information covering the physical, chemical and biological hazards and risk characteristics of hazardous materials used by businesses in the county. Chemknowledge® is also available on all HIRT emergency response vehicles.

CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM (CALARP)

The business-specific inventory information collected by the CUPA Program is also used to identify those facilities that handle hazardous substances which may require a risk management plan (RMP). A stationary source (non-transportation) with more than a threshold quantity of a "regulated substance" in a process is required to prepare and submit a risk management plan to the CUPA.

The RMP requires a facility to conduct a comprehensive evaluation of all the administrative and operational procedures associated with a process using "regulated substances" within a facility. The risk management plan requires an owner to conduct a hazard assessment. Owners identify the regulated substance and quantities on-site, document a five-year accident history, develop worst-case and most likely release models which could affect the community, and develop an accidental release prevention program and emergency response plan. RMPs are submitted to HMD where they are reviewed for completeness. Facilities subject to federal requirements must also submit their RMP to USEPA for review.

Currently, approximately 70 businesses in the county are preparing RMPs following State and Federal requirements.

The facility screening method and other specific CalARP information are contained in the "County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance" (July 30, 2007) (Appendix E).

UNIFIED SAN DIEGO COUNTY HAZARDOUS MATERIALS INCIDENT RESPONSE TEAM

The Department of Environmental Health, Hazardous Materials Division has been the State designated enforcement authority for hazardous waste management in San Diego County since 1981. Emergencies resulting from releases of hazardous materials occur throughout the county. These emergencies include illegal abandonment or disposal of hazardous wastes, industrial manufacturing and transportation accidents, clandestine drug lab activities, chemical explosions and hoaxes involving hazardous materials and biological agents.

Recognizing the need to protect the public health from chemical release emergencies and in compliance with Federal Provisions of the Superfund Amendments and Reauthorization Act (SARA Title 3), the County of San Diego Board of Supervisors directed staff to amend the Unified San Diego County Emergency Services Agreement to establish and implement the Hazardous Incident Response Program (February 11, 1986). Unanimously approved by all incorporated cities and the county, the Unified Disaster Council (UDC) became the governing body of the program whose daily operation is administered by the San Diego County Office of Emergency Services (OES). The HIRT Program is funded through a Joint Powers Agreement (JPA) of the UDC with contributions from each incorporated City and the County. The funding formula is based on assessed property values and the jurisdictions population numbers. The total program budget for FY 10/11 and FY 11/12 is $1,593,786. Program costs are reduced by revenue from responsible party cost recovery, interest on the HIRT Trust Fund, and contributions from the United States Marine Corp on MCAS Miramar, Campo, La Posta, Cuyapaipe, Manzanita, Rincon, San Pasqual, Santa Ysabel, Viejas and Pala Indian Reservations.

The single-source contract with the JPA calls for hazardous materials emergency response to be provided countywide through the joint efforts of the San Diego Fire-Rescue Department (SDFD) HAZMAT Team and the San Diego County Hazardous Materials Division (HMD) HAZMAT Team. Each of these agencies have highly trained teams with almost 30 years of experience in responding to hazardous materials emergencies.

The SDFD HIRT is responsible for mitigating, containing and/or controlling the release, effecting rescues and other related tasks. The DEH HIRT is responsible for assessing the risk to public health and safety and the environment, taking the necessary steps to mitigate these hazards, ensuring adequate cleanup of the area and conducting necessary enforcement activities. The Joint HIRT team provides advice and technical support to the first responder but does not assume scene management responsibilities. The first responder or appropriate agency maintains full control and authority over the incident and retains responsibility for release of public information concerning the incident. Complete descriptions of background information, the purpose and objectives of HIRT, the legal authority and the mutual aid agreements that allow its continued operation are discussed in the Unified San Diego County Emergency Services Organization HIRT Program description (Section D).

Historically, in the 24 plus years of operation, the HIRT has responded to over 10000 chemical emergencies. Generally, 50% of the chemical emergencies occur in the City of San Diego, with 20% in the unincorporated areas of the county and the remaining 30% in the other cities. In the unincorporated county areas there remains a heavy dependency on HIRT services to support the limited response resources that often are provided by volunteer firefighters and other first responders.

Since its inception, the HIRT program has responded to an average of one incident per day with that number rising considerable during times involving incidents of significance.

NUMBER OF HIRT INCIDENTS BY YEAR

YEAR	# of Incidents
1986	229
1987	489
1988	634
1989	583
1990	557
1991	529
1992	565
1993	429
1994	343
1995	316
1996	367
1997	366
1998	292
1999	264
2000	327
2001	637
2002	364
2003	361
2004	338
2005	327
2006	384
2007	552
2008	450
2009	511

HIRT is normally activated through the City of San Diego's Fire Department Communications Center or contacted through County Communications Station M. HIRT can also be dispatched directly by telephone, cellular phone, pager, 800MHZ radio channels and 911.

THE OFFICE OF EMERGENCY SERVICES

The San Diego County Office of Emergency Services (OES) is the primary emergency planning agency for San Diego County. OES prepares and maintains each of the county's comprehensive emergency plans. OES oversees and maintains the County of San Diego’s Operational Area Emergency Plan which is included in and referenced to this plan. In addition, OES is staff to the Unified Disaster Council, the governing body of the Unified San Diego County Emergency Services Organization.

The OES functions in an administrative capacity to the HIRT program, maintaining the provider contracts, coordinating committees, and implementing cost recovery activities.

TRANSPORTATION OF HAZARDOUS SUBSTANCES/BORDER INSPECTION

The major transportation corridors in San Diego County are as follows:

- Interstates 5, 805, 15, 125 and State Route 163 and 67 run roughly north/south.
- Interstate 8, and State Routes 52, 54, 56 and 94 run east/west.

There are grant monies available to conduct a transportation commodities flow study under the Hazardous Materials transportation Act (HMTA) that continues to be administered by the Local Emergency Planning Committee (LEPC). The money is being used to enhance previous studies concerning the transportation of hazardous substance on the major transportation routes within the region. Additionally, with assistance from grants provided by the LEPC, HIRT units carry a transportation of dangerous cargo information database called Operation Respond. This computerized software package allows response staff to receive real time data (online review of rail consists and bills of lading from some trucking companies) on shipments of hazardous materials being moved through the county in an individual rail car or truck.

Currently, as a result of the CalARP submissions to HMD, area maps have been received that show sensitive population in relation to transportation routes within the county. These maps will be further refined in the future to also show the locations of facilities that are required to develop and RMP and how "worst case" releases might impact the region's major transportation corridors.

San Diego County has a long U.S./Mexico international border. There are five ports of entry between the United States and Mexico: Commercial crossings at Otay/San Diego and Tecate, non-commercial at the Tecate/San Diego crossing, and one combined port. Ensenada lies within 60 miles of the border and includes one marine port of entry. There is a potential for accidents involving both hazardous materials going into Mexico and hazardous wastes returning from Mexico. There is also an accident potential for hazardous materials and wastes in transit being shipped by maquiladoras to other foreign countries, such as Canada and Japan.

Current projects to obtain additional information about trans-border movement of hazardous substances include: a USEPA/LEPC grant for the study of hazardous chemical electronic data bases available on both sides of the U.S./MEXICO international border and the California Border Inspection Program. The current UESPA Border Grant was initiated to give emergency response and planning agencies within the Mexico and California border area the opportunity to evaluate available hardware and software packages appropriate for their jurisdiction, which can provide vital information about actual and potential chemical spills. Examples include CAMEO, BOLDR, CATS and the bi-national Hazardous materials Database. Information obtained from these types of studies have been incorporated into response pre-planning efforts conducted by HIRT.

The goal of the HMD border inspection program is to investigate and monitor the import and export of hazardous waste shipments between California and Mexico. Then using this information to determination are made if these shipments conform to applicable laws and regulations. The HMD coordinates with USEPA, CalIEPA, U.S. Customs and Border Inspection Program, Cal-EMA, California Highway Patrol and other agencies on issues related to hazardous waste transportation across the border. HMD border inspection activities include: inspection of cargo and shipping containers, examination of shipping papers and hazardous waste manifests, certificates of compliance, collection of samples, and the photographing of suspicious containers and shipments. The majority of these activities are done in consort with US Customs at the Border Crossing Ports.

HAZARDOUS WASTE FROM MEXICO - THE MAQUILADORA PROGRAM

The maquiladora program was created by a 1965 bi-national agreement as part of Mexico's Border Industrialization Program and was designed to generate employment and stimulate industry in Mexico. The term "maquiladora" is used to describe a twin plant operation wherein a foreign company establishes part of its operation in Mexico. Under the maquiladora program, raw materials are allowed duty-free import into Mexico. These raw materials are processed or assembled in Mexico and the wastes must then be re-exported (returned) into the U.S. or other country of origin. When the finished goods re-enter the country of origin, duty is paid primarily on the value added.

San Diego County is geographically located in close proximity to a quickly growing area of maquiladora industries and Mexican national manufacturing facilities. With more than 1000 maquiladora operations in the San Diego Tijuana region, there is a potential for an increase in the hazardous waste stream that San Diego County must plan for, both in hazardous waste treatment and disposal needs and hazardous substances emergency incident response preparedness.

In 1999, the United States of America and Mexico signed a Joint Contingency Plan (JCP) that established a foundation for cooperative efforts regarding prevention, preparedness response, and mitigation of hazardous substance releases in the border area, which is defined as 62.2 miles (100 km) on either side of the inland international boundary. The communities of San Diego County/City of San Diego, California and Tijuana, Baja California recognized their need to cooperate with each other in times of local disasters. They took measures to create the Binational Hazardous Materials Prevention and Emergency Response Plan among the County of San Diego, the City of San Diego, California, and the City of Tijuana, Baja California that was signed into existence on October 24, 2003. This plan establishes formal communication pathways between the two political jurisdictions that can be accomplished in an expeditious manner when any incident may impact the neighboring jurisdiction.

INDUSTRY AGENCY COORDINATION EFFORTS FOR EMERGENCY PREPAREDNESS

COMMUNITY AWARENESS AND EMERGENCY RESPONSE PROGRAM

In 1985, the Community Awareness and Emergency Response (CAER) program was started by the Chemical Manufacturers Association (CMA). The objectives of this program were to cultivate public understanding of the chemical industry and to help industry engage in coordinated emergency response planning activities with governmental agencies.

Through CAER, the chemical industry works with Federal, State and local government officials to meet the regulations outlined by Title III of the Superfund Amendments and Reauthorization Act of 1986. The four San Diego CAER groups aid local industry in understanding and complying with current regulations, keeping updated on compliance changes and emergency response planning. CAER organizations provide a forum for the smooth communication of chemical emergency response information and operational procedures between industry, regulatory agencies, and the public. CAER also helps to bridge the gap between government agencies and the chemical industry by creating a receptive industrial community. CAER also provides emergency response training to its members on behalf of the Local Emergency Planning Committee and the County's HIRT Organization.

HAZARDOUS SUBSTANCES EMERGENCY RESPONSE PLANS

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION (HIRT) PROGRAM

This Plan provides background information on the formation of the Hazardous Materials Incident Response Team, delineates the organizational structure and defines membership **(Section D)**.

SAN DIEGO OPERATIONAL AREA HIRT STANDARD OPERATING GUIDELINES

The HIRT Standard Operating Guidelines provide detailed technical information for implementation during a hazardous substances emergency response. It includes information on site entry, site control and decontamination, disposal of contaminated materials, and the job functions of the participating responders on-scene **(Section B)**. Guidance documents in this plan have been scrubbed to eliminate confidential or classified information.

SB391 - PESTICIDE DRIFT PLAN

The County of San Diego Agricultural Commissioner's Office (CAC) is responsible for developing response protocols for a pesticide drift exposure incident. Pesticide drift is the movement of a pesticide through the air away from the intended target at the time of application. A pesticide drift exposure incident is a drift incident resulting in exposure to pesticides that pose the possibility of creating acute health effects and/or result in environmental contamination.

The County of San Diego Agricultural Commissioner's Office, the Department of Environmental Health, HAZMAT Division, and the Joint HIRT Team work together in reporting and responding to pesticide drift incidents. CAC will assist other agencies and the public as needed by employing various means (including the use of Reverse 911) to notify parties impacted by a pesticide drift incident. **(Section G)**

NFPA 471 –RECOMMENDED PRACTICE FOR RESPONDING TO HAZARDOUS MATERIALS INCIDENTS

NFPA 471 applies to all organizations that have responsibilities when responding to hazardous materials incidents and recommends standard operating guidelines for response. It specifically covers planning procedures, policies, and application of procedures for incident levels, personal protective equipment, decontamination, safety, and communications **(Appendix K).**

LEPC REGION VI HAZARDOUS MATERIALS EMERGENCY PLAN (REGIONAL RESPONSE PLAN)

The California Emergency Management agency, LEPC Region VI Hazardous Materials Emergency Plan is tasked with coordinating resources and facilitating an open dialog in the event mutual aid support for hazardous materials incidents within the Region VI counties of Imperial, Inyo, Mono, Riverside, San Bernardino, and San Diego are needed. This plan provides effective coordination and thereby facilitates response capability for serious hazardous materials incidents when one or more jurisdictions in Region VI become involved in a situation which overwhelms the county resources **(Section E)**.

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION AREA HAZARDOUS MATERIALS PLAN: OIL SPILL CONTINGENCIES ELEMENT

The San Diego Oil and Hazardous Substance Pollution Contingency Plan, written by the San Diego County and the U.S. Coast Guard's Marine Safety Office in San Diego, functions to provide a coordinated and integrated response by the Coast Guard On-Scene Coordinator and other Federal, State and civilian forces to pollution incidents. It outlines the duties and responsibilities of the on-scene forces and provides for standardization of procedures and policy among them. This plan contains a Geographic Directory of potential incident sources, areas to be protected and an Assistance Directory itemizing sources of services and supplies for spill response.

A Regional Plan, developed by the Office of Emergency Services, integrates emergency operations for various coastal cities and other responsible agencies in San Diego into the U.S. Coast Guard's Plan **(Appendix A)**.

San Diego County is also protected on a Federal level in the event of an oil spill along our coastline. The USEPA's Oil Spill Contingency Plan applies to all Federal agencies. It is in effect for discharges or substantial threats of discharges of oil to or upon the navigable waters of the United States and adjoining shorelines.

EMERGENCY RESPONSE PROCEDURES

(Procedures and Protocols for Hazardous Materials Emergency Response Personnel)

The following sections detail the activities of the HIRT Program.

GUIDELINES FOR APPROACH, RECOGNITION *AND* EVALUATION OF RELEASES OF HAZARDOUS SUBSTANCES

Identification of the type of hazardous substance release is one of the prime functions of the HIRT Program. Health risk evaluations are typically conducted by HMD HIRT personnel. The procedures and protocols for approach, recognition and evaluation of releases are contained in the San Diego Operational Area HIRT Standard Operating Guidelines **(Section B).** These guidelines are based on standard EPA Site Survey and Reconnaissance Protocols and policies and procedures established in Code of Federal Regulation 29 CFR 1910.120 and California Code of Regulations, Title 8, Section 5192. The Director of DEH is responsible for all the long-range logistics planning and policy decisions of all disasters involving hazardous substance releases. The Director is also responsible for identifying environmental health problems and determining the resources needed and coordinating resource allocation.

The Health and Human Services Agency (HHSA) which includes Emergency Medical Services, Bioterrorism and Public Health, is responsible for coordinating medical care for impacted members of the public during hazardous materials emergencies.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex A - Emergency Management

Annex D Multi-Casualty

Annex D - Multi-Casualty Plan

Annex E - Public Health Operations

Annex H - Environmental Health Operations

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

Chapter 4 -Hazard Specific Operations

EPA Office of Emergency and Remedial Response Standard Operating Safety Guides (Section C)

Chapter 4 -Site Control

MONITORING AND DECONTAMINATION GUIDELINES FOR PERSONNEL AND EQUIPMENT

Guidelines and standard operating procedures and guidelines (SOG) used by HIRT are contained in the San Diego Operational Area HIRT Standard Operating Guidelines. These guidelines are based on EPA standardized procedures outlined in the Standard Operating Safety Guidelines supplied by the EPA Office of Emergency and Remedial Response. Guidelines established in NFPA 471 -Recommended

Practice for Responding to Hazardous Materials Incidents and NFPA 472 -Professional Competence of Responders to Hazardous Materials Incidents. The California Specialized Training Institute (CSTI) Hazardous Materials Technician and Specialist curriculum are also used and referenced.

Equipment and personnel decontamination guidelines have also been developed by the HIRT which are documented in Standard Operating Guidelines **(Section B).**

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex H -Environmental Health Operations

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

Chapter 3 – Decontamination

EPA Office of Emergency and Remedial Response Standard Operating Safety Guides (Section C)

Chapter 4 -Site Control

Chapter 6 -Air Monitoring

Chapter 9 -Decontamination

National Fire Protection Agency 471, 2002 – Recommended Practice for responding to Hazardous materials Incidents (Appendix K)

Chapter 4 -Site Safety

Chapter 7 -Decontamination

National Fire Protection Agency 472, 2008 - Standard for Professional Competence of Responders to Hazardous Materials Incidents (Appendix K)

Chapter 4 -Competencies for the Hazardous Materials Technician

California Specialized Training Institute Hazmat Technician and Specialist Curriculum (Reference Only)

State of California, California Emergency Management Agency (Cal EMA), CSTI, September 2003
TITLE 19. PUBLIC SAFETY DIVISION 2. OFFICE OF EMERGENCY SERVICES, CHAPTER 2. EMERGENCIES AND MAJOR DISASTERS SUBCHAPTER 2. HAZARDOUS SUBSTANCES EMERGENCY RESPONSE TRAINING

PRE-EMERGENCY PLANNING

PROVISIONS FOR PRE-INCIDENT SURVEYS OF BUSINESS SITES

The HMD is the designated lead agency (CUPA) for inspections of all hazardous waste generators, hazardous materials handlers and underground tanks throughout San Diego County. A portion of this inspection involves assisting businesses in completing or the review of a business plan. Currently, HMD permits approximately 13,850 businesses that are required to prepare some type of emergency contingency plan. Information from these inspection activities are translated into a computerized format which allows a variety of data output (see Appendices C and D). The HMD currently scans the site maps and hazardous substance inventories and transfers the information onto a compact disk. Emergency response personnel from the Fire Districts served and the HIRT vehicles carry the scanned information in on board computers. The HIRT vehicles are able to access this data using these computers.

The business-specific information collected is additionally used to identify the locations of facilities that handle regulated substances and to identify facilities that may qualify for the California Accidental Release Program (CalARP). Those businesses that qualify will be required to prepare an Risk Management Plan (RMP). Through inventory evaluations and surveys HMD has identified all of the facilities handling "regulated substances" in amounts at or exceeding "threshold quantities" in San Diego County. The most common regulated substances include chlorine, sulfuric, nitric, hydrochloric acids, and ammonia.

Identification of geographic sensitive areas is also included in the San Diego Oil Spill Prevention Plan.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex E -Public Health
Annex H -Environmental Health Operations

San Diego County Department of Environmental Health Hazardous Materials Division Information packets (Appendices C and D)

Appendix C - Business Plan Form
Appendix D - Hazardous Materials Release Response Plans and Inventory

California Accidental release Prevention Program (CalARP) guidelines (Appendix E)

PROVISION FOR PRE-EMERGENCY COORDINATION WITHIN JURISDICTION AND MUTUAL AID WITH NEIGHBORING JURISDICTIONS

Provisions have been made for Pre-Emergency Coordination (both Intra- and Inter- Jurisdictional). The primary means of this coordination is through the San Diego County Unified Disaster Council (UDC) which is chaired by the County Board of Supervisors and comprised of representatives from the county and each of the 18 incorporated cities located within the Operational Area of San Diego. Members of the UDC have signed a Joint Powers Agreement (JPA) establishing mutual aid procedures. More specifically, the UDC has adopted the Unified San Diego County Hazardous Materials Emergency Response Program which establishes the responsibilities of the HIRT and other member jurisdictions. As part of this program, the HIRT Policy Committee meets quarterly to ensure coordination and consistency among its members.

The Region VI Hazardous Materials Emergency Response Plan is developed by the California Emergency Management Agency (Cal EMA). The Superfund Amendment and Reauthorization Act (SARA, 1986) established Local Emergency Planning Committees (LEPCs) to develop local chemical emergency plans or regional plans. The purpose of the regional plan is to coordinate and provide an overview of coordinated regional mutual aid response which takes place during hazardous materials incidents that go beyond the capabilities of an operational (county) area. Local administering agencies (CUPAs) develop area plans, which are then integrated to develop the regional chemical emergency plans. The area plans for Mono, Inyo, San Bernardino, Riverside, Imperial and San Diego counties and for the cities of Banning, Corona, and Riverside are referenced in the Region VI Hazardous Materials Emergency Response Plan.

The actual mutual aide responses during an emergency within California are handled through the state mutual aide system following the principals of the National Incident Management System. Whereas local resources are used, then requests are placed through the Operational Area's Area Command authority to Fire or Law area coordinators first, and then the Regional Emergency Operations Centers (staffed at the state level) LEPC's have no real functional role in mutual aide within California.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex A - Emergency Management

Unified San Diego County Emergency Services Organization HIRT Program (including HIRT Joint Powers Agreement) (Section D)

San Diego County Unified Disaster Council
Section I -Executive Summary
Section II -Background
Section III-Organization and Structure
Section IV -Membership
Section V -Budget and Finance
Section VI -Program Future

San Diego County Office of Emergency Services Fifth Amended Emergency Services Agreement (Section D)

Local Emergency Response Planning Commission (LEPC) region VI Hazardous Materials emergency Plan (Section E)

PROCEDURES TO ACCESS LOCAL, STATE AND FEDERAL FUNDING ASSISTANCE

Funding for the operation of the San Diego County HIRT Program is made available through the member contributions from the 18 jurisdictions to the Joint Powers Agreement (JPA) and several adjunct participants, including the U.S. Marine Corp and Eight Indian Reservations in the region. The JPA Program funds all HIRT operations, personnel training, and equipment costs.

Emergency cleanup costs are paid for through a tiered approach. First, whenever possible, cleanup costs are paid for by the person, company or agency responsible (Responsible Party) for the release. Or by the person who owns the property where the release has occurred. This may be a private or public party.

Second, when a responsible party is not available and the cleanup cost is beyond the financial capabilities of the city or county in which the spill has occurred, State funding is sought through the State of California Emergency Reserve Account for Hazardous Materials Incidents (California Superfund) administered by CalEPA's Department of Toxic Substances Control. Costs may also be drawn from specific State funds that are available including the Clandestine Laboratory Enforcement Program (State Controller), the Fish and Wildlife Cleanup and Abatement Account (Department of Fish and Game) and the Water Pollution Cleanup and Abatement Account (CalEPA State Water Resources Control Board). There are also several State agency-specific funding sources for addressing hazardous materials incidents that impact the mandate of the programs that can provide funds. Some of these agencies are Cal Trans (the California Transportation Emergency Reserve Account), the Division of Oil and Gas (Department of Conservation), the State Lands Commission and the California National Guard.

Third, generally if the cost of the cleanup is anticipated to be more than $20,000, Federal funding is sought. The Federal government administers two primary funds to abate and mitigate a hazardous materials incident. They are the Clean Water Act Federal Pollution Fund (U.S. Coast Guard - Federal On-Scene Coordinator) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) Hazardous Substances Response Trust Fund (Federal Superfund) (Environmental Protection Agency - Federal On-Scene Coordinator).

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

San Diego Operational Area HIRT Standard Operating Guidelines (Appendix B)

Chapter 2 - Incident Documentation

Cal/EPA Department of Toxic Substance Control Guidance Document for Obtaining Funding Utilizing the Emergency Reserve Account (Appendix F)

Cal/EPA Department of Toxic Substance Control Guidance Document for Funding Clandestine Drug Laboratory removal Actions (Appendix F)

California Hazardous Materials Incident Contingency Plan (Reference Only)

PROVISIONS TO ACCESS STATE APPROVED/PERMITTED DISPOSAL FACILITIES AND EMERGENCY RESPONSE CONTRACTORS

The HMD **no longer** maintains an up-to-date listing of emergency response contractors that are available to work within San Diego County. This list changes so often that a fair and complete list is not possible. Several of the contractors are available 24 hours per day to provide resources for handling emergencies involving hazardous substances, and facilities for safely and legally storing hazardous waste if the ultimate treatment or disposal facility is currently unavailable. The current legal status of treatment and disposal facilities is available through the Southern California Office of the Department of Toxic Substances Control (DTSC), located in Glendale, or the DTSC Headquarters in Sacramento. Recommendations are made to responsible parties to contact DTSC for a current list of registered hazardous waste contractors or to use the phone book. Additionally, DEH-HMD staff recommend that responsible parties obtain multiple bids if time permits before starting work.

HIRT staff are pre-authorized to call for a certified hazardous waste cleanup company whenever the situation requires it. Currently San Diego County does not have any Treatment, Storage and Disposal Facilities that will accept hazardous waste from offsite generators or governmental agencies. Therefore, cleanup companies take hazardous wastes out of the county for disposal.

References

Unified San Diego County emergency Services Organization Operational Area Emergency Plan (Section A)

Annex E -Public Health Operations
Annex H -Environmental Health Operations

DEVELOPMENT OF AN INTEGRATED RESPONSE MANAGEMENT SYSTEM PROVIDING STANDARD STRUCTURE AND PROCEDURES

The system and authorization for handling hazardous materials incidents within San Diego County is covered in detail in the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, the HIRT JPA Program and the San Diego Operational Area HIRT Standard Operating Guidelines. All response agencies in the county use the Incident Command System (ICS), Standard Emergency Management System (SEMS), or the National Incident Management System (NIMS) for command and control, and work within the scope of the contingency plan while maintaining their own on-scene procedures. A single Incident Commander (IC) or scene manager is responsible for each incident and often a unified command system is practiced. In all cases, overall scene management is the responsibility of the established IC for the jurisdiction where the incident occurs. A responsibility matrix can be found in the Unified San Diego County Emergency Services Organization HIRT Program description. HIRT provides its service while operating as a specialized strike team under the Operations Section of the ICS system.

When required, the IC duties for the jurisdiction (clearly stated in the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan) include setting up a unified command post, initiating communications and notification, and coordinating response and mitigation with all on-scene agencies until a normal, safe condition is restored. HIRT responsibilities in all jurisdictions include mitigation, containment and control, conducting hazard and risk assessments, determining the adequacy of the cleanup and enforcement. Cost recovery, access to State and Federal assistance and post-incident procedures are included in the HIRT JPA service delivery.

HIRT has a responsibility to provide and consult on response training within the Operational Area and is the best source of information for alternate cleanup and disposal agencies.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Basic Plan
Annex A -Emergency Management
Annex A -Emergency Management, Appendix A-2

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

HIRT Policies and Procedures Manual

Unified San Diego County Emergency Services Organization HIRT Program (Section D)

NOTIFICATION AND COORDINATION

PROVISIONS FOR NOTIFICATION

Notification of the primary responders, as well as other support, State and Federal agencies, is the responsibility of the 24-hour dispatch center typically in the jurisdiction where the hazardous materials emergency occurs. These 911 centers are currently linked together to facilitate a quick and coordinated response to an incident.

To activate the HIRT, dial "911", request hazardous materials assistance and the dispatcher will notify the San Diego Fire-Rescue Department Dispatch Center, who will in turn activate the appropriate HIRT unit. This procedure is duplicated county-wide. As required in the HIRT Program JPA, both the Fire and Environmental Health components of the HIRT are activated by San Diego Fire Dispatch for response to any location within the 4250 square mile operational area. As an alternative, San Diego County Communications (Station M) can be called and will activate the County HIRT units. County HIRT will ensure that San Diego Fire-Rescue Department - HIRT units are dispatched.

Provisions for initial and secondary notification to allied regulatory and support agencies are contained in the San Diego Operational Area HIRT Standard Operating Guidelines.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex A -Emergency Management, Attachment **A**
Annex A -Emergency Management, Appendix A-2

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

IDENTIFICATION AND UTILIZATION OF ALTERNATE EMERGENCY COMMUNICATIONS

Alternate Emergency Communications systems are established in the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan. This Plan outlines all the communications resources available for use in an emergency. Among these resources are the 800MHZ San Diego Operational Area Regional Communication System which is the primary communications network assigned to first responders (Sheriff, Fire, Emergency Medical Services and public works), as well as those belonging to other governmental agencies, including the Medical Examiner, Building Inspection, Environmental Health, and the Office of Emergency Services. Listed in the plan are radio networks that are part of the regional 800MHZ system for use during large incidents. Additional resources include Command Net, Tactical Net, Support Net, and Air to Ground Net and the Radio Amateur Civil Emergency Service (RACES) network of volunteer amateur radio operators. The basic plan also outlines the specific instances when the RACES network will be activated in accordance with the Hazard-Specific Annexes. In addition, there are three Operational Area alert and warning systems designed to provide the public with emergency information. These are the Lifesaving Information For Emergencies (LIFE) Radio System and the Emergency Alert System (EAS), formerly known as the Emergency Broadcast System, and the CountyAlert®/Reverse 911® system designed to call people at home within potentially affected areas.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Basic Plan

Annex I -Communications

RESPONSIBILITY MATRIX/LISTING OF EMERGENCY RESPONSIBILITIES OF RESPONSE ORGANIZATIONS

Responsibilities and functions of local, State, Federal and private response organizations can be found in the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan and the San Diego Operational Area HIRT Standard Operating Guidelines

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Basic Plan Responsibility Matrix

Annex A -Emergency Management

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

Chapter 1-Response Criteria

Certified San Diego County Emergency Services Organization HIRT Program (Section B)

PROVISIONS FOR NOTIFICATION TO THE STATE OF CALIFORNIA EMERGENCY MANAGEMENT AGENCY (CAL EMA) OF RELEASE/THREATENED RELEASE REPORTS UNDER THE CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORTING SYSTEM (CHMIRS)

CHMIRS reports are made verbally by HIRT staff or the responsible party for each incident. The California Emergency Management Agency (Cal EMA) Duty Officer is immediately notified by phone whenever a "reportable" hazardous chemical release or a threatened release occurs within the jurisdiction.

The California Hazardous Materials Incident Reporting System (CHMIRS) was a mandatory post-incident reporting system to collect statistical data on hazardous material incidents in California. This data included a description of the disaster, the location, the time and date, the State and local agencies responding, the actions taken by the agencies, and the agency, which had primary authority for responding to the disaster. (Chapter 6.95 of the Health and Safety Code, Title 19 CCR, and Government Code Section § 8574.8 (d)). The written reporting system became obsolete in 2002 but is still contained in the Health and Safety code.

References

California Health and Safety Code, Chapter 6.95, Title 19 CCR, and Government Code Section § 8574.8 (d)

State of California Emergency Management Agency (CalEMA)

TRAINING

EMERGENCY RESPONSE PERSONNEL TRAINING

The Department of Environmental Health (DEH) Hazardous Incident Response Team (HIRT) staff are trained to the Federally mandated OSHA training standards described in 29 CFR 1910.120, and the State of California Health & Safety Code levels under Title 8, Section 5192. Staff annually participate in refresher training with our HIRT team partners in the San Diego Region. In addition, to these minimum requirements, emergency response personnel from the San Diego County Department of Environmental Health and the City of San Diego Fire-Rescue Department are trained to levels established by the California Specialized Training Institute (CSTI) through the Technician/Specialist curriculum (160/240 hours of training or more) under Title 19. All DEH-HIRT team members are California Registered Environmental Health Specialists (REHS).

The Technician/Specialist level (160/240 hours of training or more), is established by the State Fire Marshall and CSTI. CSTI offers the Technician curriculum in four, one-week modules. The Specialist curriculum is an additional two-week hands-on course. These courses comply with 29 CFR 1910.120, NFPA 472 and CGC 8574.12 and are listed in Title 19, Public Safety Division 2, Office of Emergency Services, Chapter 2 Emergencies and Major disasters, Subchapter 2, Hazardous Substances Emergency response Training

In addition to State certification, HIRT staff participate in an ongoing program of training which includes courses in rail and cargo tanker response, compressed gas emergency management, advanced air monitoring, environmental sampling, computer air modeling and risk communication. Ongoing training is scheduled monthly for half days and quarterly for a full day. HIRT members also receive approximately 150 hours of supplemental training for skills development and improvement. State law mandates that training requirements be reviewed annually. The HIRT reviews its in-house training requirements annually as well. If changes are made, they are instituted the following year.

References

Hazardous Materials Specialist Emergency response Assignments and Selection of Department of Environmental Health After-Hours Staff (Appendix H)

San Diego County Department of Environmental health Hazardous Materials Division Training Matrix (Appendix J)

San Diego Fire Department: Hazardous Materials team Equipment/Manipulative Training Tracker Summary report and San Diego County DEH Hazmat Training Tracker (Appendix J)

California Specialized training Institute hazardous materials technician and Specialist Curriculum Guides (Reference Only) Title 19, Public Safety Division 2, Office of Emergency Services, Chapter 2 Emergencies and Major disasters, Subchapter 2, Hazardous Substances Emergency response Training

EPA Office of Emergency and remedial Response Standard Operating Safety guides (Section C)

National Fire Prevention Association 741, 2002 - Recommended Practice for Responding to Hazardous Materials Incidents (Appendix K)

National Fire Prevention Association 472, 2008 - Standard for Professional Competence of Responders to Hazardous Materials Incidents

PROCEDURES FOR DOCUMENTING TRAINING

Training records are maintained for each staff member of HIRT and are the responsibility of the individual agency providing staff to the team. Examples of the initial and ongoing training established for HIRT staff are found in **Appendix J**.

Reference

HIRT Training Matrix and Equipment/Manipulative Training Tracker Summary reports (Appendix J)

PROVISIONS FOR FIELD AND TABLETOP EXERCISES

HIRT routinely conducts monthly (half day) and quarterly (full day) drills to exercise skills and knowledge required of team members. Joint drills are made available to other response agencies that potentially could respond to the Operational Area of San Diego. These can include members of State and Federal Agencies, Federal fire departments, Civil Support Teams and the local military reservations where HIRT responds.

An extensive annual tabletop and full functional exercise program is conducted under the direction of the County Office of Emergency Services (OES). Such drills involve representatives from all the major public and private agencies who could be impacted by a large event disaster or terrorism related incident. At least one and often two major tabletop and/or functional drills are scheduled each year to exercise HIRT response capabilities. This includes exercising chemical and biological terrorism preparedness with members of the Metropolitan Medical Strike Team and disaster medical assistance teams in San Diego. LEPC drills and tabletops are also scheduled in the region to practice hazmat responses involving the San Diego/Mexico international border.

Additionally, four Community Awareness and Emergency Response (CAER) groups have been established, with one still meeting regularly in the region. CAER organizations are voluntary groups made up of industry and emergency response agencies. The CAER associations coordinate with HIRT and DEH to improve emergency response capabilities and training with the intention of minimizing the risk of a chemical spill or release. Member companies that belong to CAER will also schedule tabletop or functional exercises with HIRT to improve on coordination issues.

The CAER groups compile information on cleanup equipment for hazardous substances incident response, both facility-owned and equipment available through contract. This information is available at the individual companies and is utilized when needed.

Reference

CAER: Community Awareness and Emergency Response (Reference Only)

South Bay CAER, San Diego CAER, Rancho Bernardo CAER, Carlsbad CAER - still active

PUBLIC SAFETY INFORMATION

SITE PERIMETER SECURITY

The San Diego Operational Area HIRT Standard Operating Guidelines, the EPA's Standard Operating Safety Guides and the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan details site perimeter security measures. Each plan designates local law enforcement agencies with the primary functions of public safety and evacuation, when necessary. CSTI's Hazardous Materials Awareness or Operations level training provided to all first responders contains procedures for the safe approach to incident sites. The information gathered during the initial dispatch report provides a basis for the responders to plan a safe route to the scene and initiate protective actions to safeguard the public.

Reference

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

San Diego County Office of Emergency Services (OES)

Annex C -Law Enforcement,

San Diego Operation Area HIRT Standard Operating Guidelines (Section B)

California Specialized training Institute: First Responder Awareness and Operations Curriculum (Reference Only) Title 19, Public Safety Division 2, Office of Emergency Services, Chapter 2, Emergencies and Major Disasters Subchapter 2, Hazardous Substances Emergency Response Training.

SAFETY PROCEDURE INFORMATION: PROVISIONS FOR INFORMING EMPLOYEES *AND* PUBLIC REGARDING SAFETY PROCEDURES DURING EMERGENCY

Site-specific safety issues are the responsibility of an emergency coordinator established for each business. Each facility must document their operational safety policies and procedures in a business plan, which is required of all facilities handling hazardous materials, or storing hazardous wastes, in excess of threshold quantities, as, stated in Chapter 6.95 of the California Health and Safety Code. The completed business plan information is provided to all local emergency responders who could be impacted by a release. Additionally, the contact information for emergency coordinators for each permitted business is kept in a computerized database available on HIRT response vehicles.

HIRT will conduct on-scene hazard appraisals, risk assessments and inform the Incident Commander (IC) of its findings. The on-scene IC is responsible through his/her designated Public Information Officer (PIO) to release the information to employees/public. Public notification (during hazardous materials emergencies) is the responsibility of the on-scene IC and the County Office of Emergency Services (OES). The public notification system is contained in the San Diego County Life Saving Information for Emergencies (LIFE) Radio System. A program for regular testing and maintenance is the responsibility of the OES. The public also receives emergency information through the Emergency Alert System (EAS) which is available for use on a 24-hour basis. The San Diego County Sheriff's Department's Dispatch center operates the Reverse 911® system designed to call people at home within potentially affected areas.

The OES has provisions for public information and rumor control upon activation of the County Operations Center and the Unified San Diego County Emergency Services Organization Operation Area

Emergency Plan Communications and will utilize the services of 211 to provide information to citizens during an emergency. (See Annex I)

A public education program on hazardous materials management is provided by the San Diego County DEH-HMD, our CAER partners and County of San Diego OES.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Basic Plan

Annex A -Emergency Management, Appendix A

Annex I -Communications

Annex L -Emergency Public Information

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

Business Plan Form (Appendix C)

EPA Office of Emergency and Remedial response Standard Operating Safety Guides (Section C)

DESIGNATION OF PROCEDURES FOR INFORMATION RELEASE: RESPONSIBILITY FOR COORDINATED RELEASE OF SAFETY INFORMATION TO THE PUBIC AND EMERGENCY ALERT SYSTEM (EAS)

Alerting the public to the potential hazards of an incident is the responsibility of the Incident Commander (IC). All media releases and flow of information from the scene are authorized by the IC to ensure the timely and accurate notification of the public.

As in all emergencies, the Office of Emergency Services (OES) is responsible for the coordination and dissemination of emergency information through various operational area mechanisms. These are referenced in the San Diego County Emergency Plan:

- The County emergency Public Information Media Team
- The Office of Emergency Services (OES) Public Information Officer
- Life Saving Information for Emergencies (LIFE)
- Emergency Alert System (EAS)
- Radio Amateur Civil Emergency Service (RACES)
- The Emergency Public Information Center
- The Joint Information Center (JIC)
- Alert San Diego and Reverse 911®

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

San Diego County Office of Emergency Services (OES)

Annex A – Managing emergencies

Annex I – Communication

Annex L – Emergency Public Information

MEDICAL NOTIFICATION: PROVISION OF INFORMING MEDICAL FACILITIES (24-HOUR) OF NATURE OF INCIDENT AND SUBSTANCES INVOLVED

The disaster management system for emergency medical services in San Diego County is well-established. This system addresses all the necessary functions of a coordinated multi-agency response to all medical multi-casualty incidents. The Medical Multi-Casualty Annex to the San Diego County Operational Emergency Plan is the unifying document for the emergency plans of local hospitals, cities, and emergency response agencies. The plan further defines specific tasks critical to the management of a hazardous materials incident under Annex D-1 and D-2, Emergency Action Checklist Response to Hazardous Materials Incident. A notification flow chart in Annex D (page D-17) and 800 MHz EMS - Fleet Map (FOUO) outline how hazardous materials information would be disseminated by the response personnel at the scene to the EMS responding units and base hospitals on a 24-hour basis.

Development of training and exercises are done through the County's Emergency Medical Services Area Planning meetings. These meetings involve all medical response agencies and are dedicated to the development, implementation and evaluation of realistic training exercises within the county.

In addition to the emergency medical response, the Public Health Operation Annex, Annex E, highlights essential public health activities that will be coordinated in Appendix E-2, Public Health Emergency Action Checklist Response to a Hazardous Materials Incident.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex D - Medical Multi-Casualty Plan, (Appendix D)

Annex E - Public Health Operations, Appendix E

EVACUATION PLANS - DESIGNATION OF ORDERING AUTHORITY AND IDENTIFICATION OF AGENCY EVACUATION RESPONSIBILITIES

The Sheriff or local Police Department, assisted by other agencies including the County Office of Emergency Services (OES), are responsible for evacuations. The basic evacuation guidelines of the County of San Diego and individual City Emergency Plans apply. The decision to evacuate and the selection of evacuation distances will be the responsibility of the on-scene Incident Commander (IC) or his/her designee and may be based on the tables found in the 2008 DOT Emergency Response Guidebook or other guidelines* as appropriate.
Mass care facilities, shelters and individual agency responsibilities are covered in depth in Annex G of the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex C -Law Enforcement Mutual Aid Operations: Evacuation Operations -Attachment D

Annex D -Multi-Casualty Plan Responsibility Chart

Annex G -Shelter and Care Operations: Care and Shelter Coordinator - Emergency Action Checklist for all Shelter and Care (Appendix G)

2008 Department of Transportation Emergency Response Guidebook (Reference only)

*Conditions at the scene, professional judgment and computer models provided by the Department of Transportation, National Oceanographic and Atmospheric Administration or other governmental agencies.

Coordination With The Red Cross

Coordination of the Red Cross at an incident requiring care and shelter of evacuees rests primarily with the on-scene Incident Commander (IC) and the coordinating Emergency Operation Center that may have been established to oversee a large incident within the jurisdiction affected. Shelters can also be initiated by the County's Duty Officer at the Office of Emergency Services (OES) or the Director of Human Health and Services Agency (HHSA). Procedures for alerting and notifying the Red Cross are incorporated in the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (reference Annex I -Communications and Annex D -Multi-Casualty Plan). Additionally, the San Diego County Health and Human Services Agency (HHSA), which assigns area care and shelter coordinators assists the Red Cross in providing mass care. Activation and tabletop exercises and functional drills are designed to test and improve the coordination between the Red Cross and requesting agencies needing assistance.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex D -Multi-casualty Plan

Annex I -Communications

PROVISIONS FOR TRANSPORTATION

Law enforcement and supporting organizations have the responsibility of evacuation, dispersal and/or relocation of persons from threatened or hazardous areas to a safe location during hazardous substance releases. Law enforcement may enlist the help of the HIRT team when performing the Hazard Assessments for a given situation prior to the final decision to evacuate or giving a Shelter in Place order to citizens. These decisions will follow provisions in each jurisdiction's emergency plans or the San Diego County plan to expedite the movement of persons from hazardous areas, control evacuation traffic, provide for the procurement, allocation and use of necessary transportation resources by means of mutual aid or other agreements with public or private transportation services.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex C -Law Enforcement Mutual Aid Operations -Evacuation Operation Attachment D

Annex D -Multi-Casualty Plan Multi-County Responsibility Chart

Annex G -Shelter and Care Operation

PROVISIONS FOR MASS CARE AND SHELTERING

The Care and Shelter Operations Annex (G) of the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan describes the organizational and operational policies and procedures required to meet the needs of displaced persons from a hazardous materials release. It also cites authorities and specifies the public and private organization responsible for providing mass care and welfare inquiry services.

Reference

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex G -Care and Shelter Operations

MAJOR TRANSPORTATION ROUTES

A comprehensive map of the major transportation routes for passenger and bus transportation, light rail (trolley) and railroad are provided in **Section F**.

SECURITY OF EVACUATED AREAS

In the event of a hazardous materials release, it will be necessary to secure and restrict access to and from the hazardous area. As an integral part of the Incident Command System, law enforcement within the responsible jurisdiction will be assigned the task of access control. Four aspects of control must be considered which include:

1. Perimeter control and area security,
2. access control,
3. Command Post coordination
4. Managing temporary evacuation points.

The policies and procedures required to carry out the security objectives at a hazardous materials scene are outlined in the San Diego County Emergency Services Organization Operational Area Emergency Plan, Annex C and the Law Enforcement Mutual Aid Operations Attachment C -Access Control.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

Annex C -Law Enforcement Mutual Aid Operation - Appendix C

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

EPA Office of emergency and remedial Response Standard Operating Safety Guidelines (Section C)

Chapter 4 -Site Control

SUPPLIES AND EQUIPMENT

DESIGNATION OF AGENCY RESPONSIBLE FOR EQUIPMENT *AND* SUPPLIES

The HIRT maintains an equipment inventory sufficient to enable its staff to respond to the majority of chemical incidents occurring in San Diego County should their services be requested by a local fire agency or other first responder. Response and safety equipment is available on five response units and in the three storage facilities operated by HIRT members. All equipment caches can be accessed 24 hours a day. The Department of Environmental Health (DEH), Hazardous Materials Division (HMD), has a full-time Environmental Health Technician assigned to HIRT equipment maintenance.

Public and private sector resources available for emergency response activities are identified in the Emergency Resources Directory of the Unified San Diego County Emergency Services Organization, currently available on CD-ROM. The directory lists equipment type, owner (public/private) and location. It also details contact persons and phone numbers and the equipment availability on a 24-hour basis. HIRT equipment lists are updated on an annual basis. Each HIRT member employs specially trained staff to maintain and test all emergency response equipment as required by all applicable safety standards. Currently, no major shortfalls in chemical response equipment have been identified for HIRT.

References

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan (Section A)

San Diego County emergency Resources directory (Reference only - from the San Diego County Office of Emergency Services)

PROVISIONS FOR REGULAR TESTING AND MAINTENANCE OF EQUIPMENT

The HIRT tests and maintains their emergency response equipment as required. Each member agency is responsible for the maintenance and testing of its own equipment following schedules each agency adopts. Personal protective equipment is tested and maintained according to Fed-OSHA, Cal-OSHA, NIOSH, EPA or NFPA standards. Analytical equipment is tested, calibrated and serviced following manufacturers specifications using traceable/certified standards. Maintenance records are on file and maintained by each member agency. Standardized safety equipment and instruments are serviced and repaired by factory certified service agencies. DEH maintains a full-time Environmental Health Technician assigned to HIRT equipment maintenance upkeep.

A list of equipment maintained by member agencies is available for review by a member agency, however the inventory itself is considered For Official Use Only and will not be provided as part of this plan.

INCIDENT CRITIQUE AND FOLLOW-UP

PROVISIONS FOR MAJOR INCIDENT RESPONSE CRITIQUES AND FOLLOW-UP

During an incident, the local fire department is responsible for Incident Command, scene management and scene-related issues except on Highways where it is Law Enforcement unless local agreements supersede. The Hazardous Materials Division (HMD) is responsible for ensuring the safety and protection of the environmental and public health, as well as enforcing environmental law. The role of the San Diego Fire-Rescue Department (SDFD-HIRT) is to mitigate and control the hazardous substance in a cooperative manner with HMD-HIRT. The HIRT team members are also responsible for providing the opportunity to do an incident critique and follow-up.

After all major incidents the HIRT team routinely asks the contracting agency if they would like to discuss and critique what the team did and how they performed. Organizational responsibilities and actions taken by the HMD-HIRT and the SDFD-HIRT Team elements of HIRT can be revised immediately based on this feedback.

Multi-jurisdictional evaluations are the prerogative of the jurisdiction in which the incident occurs. The HIRT Program encourages critiques, with the Unified Disaster Council (UDC) and/or HIRT Policy Committee meetings often serving as a forum for these critiques.

Violations of local and State law, which are noted during hazardous materials emergencies, are referred to the Certified Unified Program Agency (CUPA) for enforcement or appropriate follow-up action, if needed. Cost recovery actions are pursued by HIRT and/or other agencies, as appropriate, following provisions established by the HIRT Policy Committee or local municipal ordinances.

Modifications to the Area Plan will be made after a major incident has been critiqued or as more current information becomes available on an as-needed basis. Pursuant to the California Health and Safety Code, Chapter 6.95, Section 25503, any time there is a substantial change to the Area Plan, the change shall be forwarded to the California Emergency Management Agency (CalEMA) within 14 days after the changes have been made.

References

Unified San Diego Emergency Services Organization HIRT Program (Including HIRT Joint Powers Agreement) (Section D)

San Diego Operational Area HIRT Standard Operating Guidelines (Section B)

Incident Critique Protocol (Section 2 - Incident Documentation)

SECTION A

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION OPERATIONAL AREA EMERGENCY PLAN

http://www.sdcounty.ca.gov/oes/emergency_management/protected/docs

THIS PLAN WAS UPDATED
December 2010

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan

Executive Summary

October 2010

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UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
&
COUNTY OF SAN DIEGO
OPERATIONAL AREA EMERGENCY PLAN

Background: The San Diego County Operational Area was formed in the 1960's to assist all of the cities and the County in developing emergency plans, exercising those plans, developing Mutual Aid capabilities between jurisdictions and, in general, establishing relationships that would improve communications between jurisdictions and agencies. The San Diego County Operational Area consists of the County and all jurisdictions within the County.

The Operational Area Emergency Plan is for use by the County and all of the cities within the County to respond to major emergencies and disasters. It describes the roles and responsibilities of all county departments and many city departments.

The Cities are encouraged to adopt the Operational Area Emergency Plan as their own, with modifications as appropriate for their city. The Plan is updated every four years by the Office of Emergency Services and the Unified Disaster Council of the Unified San Diego County Emergency Services Organization.

THE PLAN

A. The Basic Plan

The Basic Plan portion of the Operational Area Emergency Plan contains information on the San Diego County Operational Area and lists all of the hazards that our County is susceptible to. Those hazards include but are not limited to:

- Earthquake
- Flooding
- Drought
- Dam Failure
- Nuclear-related incidents
- Water, Gas or Energy Shortage
- Terrorism
- Tsunami
- Wildland Fire
- Urban Fire
- Transportation Accidents
- Hazardous material incidents
- Landslides

The County of San Diego and the cities within the County have all agreed to work together in the area of emergency management. The cities within the County are dues paying members of the Unified San Diego County Emergency Services Organization.

1. Overview

The San Diego County Operational Area consists of 19 jurisdictions that range in population from several thousand to over 1,000,000. To foster a regional approach, the cities and County joined together in 1961 to form an Operational Area and

entered into a Joint Powers Authority (JPA). The JPA establishes procedures and protocols for assisting each other in the event of a disaster or major emergency which would be beyond the capability of any single jurisdiction to handle.

An Operational Area is defined as a County and each of its political jurisdictions, including Special Districts. The Unified Disaster Council is the policy making body for the Unified Organization, and the Office of Emergency Services is staff to the Unified Organization.

The Operational Area Emergency Plan has been designed to follow the State mandated Standardized Emergency Management System (SEMS) and the Federal mandated National Incident Management System (NIMS). SEMS and NIMS are based on the Incident Command System and the Multiple Agency Coordination System, both of which have been used by fire departments for years. The California Emergency Management Agency (Cal EMA) has certified that the Plan meets State guidelines.

This Emergency Plan has been designed to be used by individual jurisdictions within the Operational Area in the development of their own plans. In most cases, with just a few changes, the Operational Area Emergency Plan can be used as the basis for city plans.

2. Purpose

The San Diego County Operational Area Emergency Plan describes a comprehensive emergency management system which provides for a planned response to disaster situations associated with natural disasters, technological incidents, terrorism and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization, and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The plan also identifies the sources of outside support which might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private sector.

The plan cites authorities and references to support the plan and has five objectives:

(1) To provide a system for the effective management of emergency situations.
(2) To identify lines of authority and relationships.
(3) To assign tasks and responsibilities.
(4) To ensure adequate maintenance of facilities, services and resources.
(5) To provide a framework for adequate resources for recovery operations.

3. The Annexes

The Plan is complete with 17 functional annexes. These annexes are:

Annex A	Emergency Management
Annex B	Fire and Rescue Mutual Aid Operations
Annex C	Law Enforcement Mutual Aid Operations
Annex D	Mass-Casualty Operations
Annex E	Public Health Operations
Annex F	Department of the Chief Medical Examiner Operations
Annex G	Care and Shelter Operations
Annex H	Environmental Health Operations
Annex I	Communications and Warning Systems
Annex J	Construction and Engineering Operations
Annex K	Logistics
Annex L	Emergency Public Information
Annex M	Behavioral Health Operations
Annex N	(Not Assigned)
Annex O	Animal Services
Annex P	Terrorism
Annex Q	Evacuation
Annex R	Operational Area Recovery Plan

A. Annex A - Emergency Management

The Emergency Management Annex describes the Emergency Operations Center (EOC) and the positions and activities within the EOC. It states that if a disaster occurs in the unincorporated area of the County, the Chief Administrative Officer (CAO) will direct the emergency as the Director of Emergency Services. If the disaster or emergency occurs in more than one jurisdiction, the CAO will become the Coordinator of Emergency Services and will coordinate resources. The coordination or direction will be carried out at the Operational Area EOC.

The EOC is divided into six sections:

(1) Policy
(2) Operations
(3) Planning
(4) Information/Intelligence
(5) Logistics
(6) Finance/Administration

Under NIMS, the sections within the EOC mirror the Incident Command System position titles in the field. Communications at the field and EOC levels occur laterally between sections and vertically between levels of government, except the Policy Group which is called Command in the field.

Annex A also provides information on the warning systems used to notify the public of the need to evacuate or take protective action.

Annex A also discusses local Proclamations of Emergency and contains sample proclamations of emergency for both cities and the County.

B. Annex B - Fire and Rescue Mutual Aid Operations

Annex B is devoted to Fire and Rescue Operations. Most fires can be handled by the first responding agency and there are a number of mutual aid agreements, both written and unwritten between fire agencies. Some of the agreements even call for Automatic Aid, meaning that when a first alarm is given, a neighboring fire department is sent at the same time or instead of the primary Department.

Any fire department can request assistance from other fire departments throughout the county simply by requesting those assets from the Operational Area Fire Coordinator (California Department of Forestry and Fire Protection), also known as CAL FIRE. CAL FIRE will then put together Strike Teams to provide assistance to the requesting agency.

The Operational Area Fire Coordinator is responsible for coordinating Mutual Aid requests and assignments. He/she is able to request strike teams and other resources from fire departments within the Operational Area and fire departments throughout the State of California. Once the request has been made, it is the responsibility of the Coordinator to tell the incoming units where to stage and put them in touch with the Incident Commander.

The rescue portion of the plan acknowledges the existence of the **Urban Search and Rescue** teams that are available throughout the State of California and the United States. It identifies the Fire Mutual Aid Zones within the county and discusses the use of communications equipment and frequencies.

C. Annex C - Law Enforcement Mutual Aid Operations

The Law Enforcement Mutual Aid Operations Annex addresses the lines of communications for requesting law enforcement assets through the Operational Area Law Enforcement Coordinator, which is the San Diego County Sheriff. It identifies the Regional Law Enforcement Coordinator, which is the San Bernardino County Sheriff, and states the responsibilities of law enforcement in the San Diego Operational Area, which consist of:

(1) Law enforcement
(2) Evacuation
(3) Traffic control in contract cities and
(4) Providing assistance to other law enforcement agencies

The Sheriff is the Director of law enforcement activities for the unincorporated areas of San Diego County, and those cities that have contracted with the Sheriff for law enforcement. He/she is the Mutual Aid Coordinator for law enforcement resources in the incorporated cities.

D. Annex D - Mass-Casualty Operations

Annex D is the annex that is exercised and used most often. It is routinely used in traffic accidents with more than five or ten injuries and is used in exercises throughout the year by all of the hospitals to meet accreditation requirements. County Emergency Medical Services is responsible for the update and revisions to Annex D.

Annex D identifies the system of Base hospitals, trauma facilities and satellite hospitals in the San Diego County Operational Area. It also defines the role of paramedics, EMTs, hospital personnel, law enforcement, fire and hazardous materials specialists, among others. It defines communications links between the field and the hospitals and identifies Station M and its role. It also describes the National Disaster Medical System (NDMS) which can be activated in the event of a major emergency where the number of injured exceeds local capabilities.

E. Annex E - Public Health Operations

Annex E describes the roles and responsibilities of the Public Health Divisions of the San Diego County Health and Human Services Agency, including Public Health Nurses, the Public Health Lab and various other divisions. The primary missions of Public Health include preventative health measures and communicable disease control.

F. Annex F – Department of the Chief Medical Examiner Operations

This annex defines the role of the Department of the Chief Medical Examiner during and following a disaster, and discusses statewide Mutual Aid. The Department of the Chief Medical Examiner is responsible for setting up Medical Examiner Emergency Teams, temporary morgues, search and rescue teams for body recovery, and the procurement and allocation of supplies and resources. The Department of the Chief Medical Examiner is also responsible for the identification and listing of the victims, and the notification of next of kin.

G. Annex G - Care and Shelter Operations

This annex defines the role of the Health and Human Services Agency and the American Red Cross (ARC) in providing care and shelter. In San Diego County, mass care services may be provided by a combination of any one of the following agencies: ARC, County of San Diego, local governments and/or faith-based organizations.

H. Annex H - Environmental Health Operations

This annex describes the role of the Department of Environmental Health. It has several roles and responsibilities, including:

- ☞ Health inspection of shelters,
- ☞ Hazardous Material response,

- ☞ Inspection of filtration plants and the determination of water potability,
- ☞ Establishing methods and procedures for dealing with vector and rodent control,
- ☞ Supervision of food delivery systems.

I. Annex I – Communications and Warning Systems

This Annex describes all of the communications capabilities that exist in the Operational Area at this time. Managing 24-hour interoperable communications is completed by jurisdictional and Regional Communications System (RCS) staff.

J. Annex J - Construction and Engineering Operations

This Annex defines the role of public works departments at the County and city levels. Tasks include providing supervision for the repair, modification, and/or construction of emergency facilities and housing, inspecting damaged structures, and restoring, maintaining and operating essential services.

K. Annex K - Logistics

Annex K deals with personnel, supplies and equipment and how they are obtained and supported. Some of the needed assets may come from other counties and other states. All of the costs need to be tracked so that claims can be made to federal agencies during the recovery process.

L. Annex L - Emergency Public Information

This annex describes the responsibilities for emergency public information including all aspects of public notification, alert and warning including the activation and operation of a Joint Information System (JIS) and Joint Information Center (JIC).

M. Annex M - Behavioral Health Operations

This annex describes the role of the Behavioral Health Division of the Health and Human Services Agency. County Behavioral Health has a role in the field and at the Emergency Operations Center. Many of their practitioners are trained to assist both disaster workers and people in shelters, who have lost their homes and possessions.

N. Annex N

Annex N is not assigned at this time.

O. Annex O - Animal Services

This annex describes the role of the San Diego County Department of Animal Services and the other animal control and animal care agencies in the Operational Area. This annex is supported by a Mutual Aid Agreement.

P. Annex P - Terrorism

This annex provides a summary of the Terrorist Incident Emergency Response Protocol. This protocol defines the framework for developing and sustaining a comprehensive and integrated approach addressing terrorism in the San Diego County Operational Area. It is a blueprint for the development of Operational Area efforts for responding to and combating terrorism, with special emphasis on terrorist acts employing weapons of mass destruction (WMD) such as nuclear, biological or chemical (NBC) terrorism in addition to conventional weapons (bombs).

Q. Annex Q - Evacuation

The San Diego County Operational Area (OA) Evacuation Annex is intended to be used as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. This Annex outlines strategies, procedures, recommendations and organizational structures that can be used to implement a coordinated evacuation effort in the San Diego OA.

R. Annex R – Operational Area Recovery Plan

This annex describes a coordinated system for disaster recovery operations in disaster situations. It delineates operational concepts relating to recovery, identifies components of the recovery organization and describes the overall responsibilities intended to expedite public and private recovery. The OA Recovery Plan is designed to provide guidance to the County of San Diego and jurisdictions, agencies, organizations and businesses interacting with the County.

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

October 2010

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Record Of Changes

Date Of Change	Section Number	Page Numbers	Entered By	Date

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Unified San Diego County Emergency Services Organization
Operational Area Emergency Plan

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San Diego County Office of Emergency Services

This Operational Area Emergency Plan was adopted by the Unified Disaster Council in October 2010. The Unified Disaster Council has referred this Operational Area Emergency Plan to their member jurisdictions with a recommendation that each member agency adopt this plan as their jurisdictional Emergency Plan, with minor modifications as appropriate.

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A. Emergency Management
B. Fire and Rescue Mutual Aid Operations
C. Law Enforcement Mutual Aid Operations
D. Mass Casualty Operations
E. Public Health Operations
F. Department of the Chief Medical Examiner Operations
G. Care and Shelter Operations
H. Environmental Health Operations
I. Communications and Warning Systems
J. Construction and Engineering Operations
K. Logistics
L. Emergency Public Information
M. Behavioral Health Operations
O. Animal Services
P. Terrorism
Q. Evacuation
R. Operational Area Recovery Plan

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Foreword

Saving lives, the protection of life, the environment and property are the primary goals of governmental public safety agencies. Emergency plans provide the basis from which response and recovery operations are executed. The success of these plans depends largely, in part, on the collaboration of the agencies and jurisdictions responsible for the development and maintenance of these plans. The formation of an emergency organization, policies, and roles and responsibilities are essential aspects of all effective emergency plans.

In the early 1960s, all of the cities and the County formed a Joint Powers Agreement which established the Unified San Diego County Emergency Services Organization and the Unified Disaster Council (UDC) which is the policy making group of the organization. It also created the San Diego County Office of Emergency Services (OES), which is staff to the Unified Emergency Services Organization.

Utilizing the Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS) regional emergency planning has been a comprehensive approach to prepare and plan for all-hazards disasters and emergencies. Recent events such Firestorms in San Diego County in 2007, Hurricanes Katrina in 2005, the San Diego County Firestorms in 2003, the destruction of the World Trade Center on September 11, 2001, and many other events throughout the world, have demonstrated the need for preparedness. San Diego County OES is the agency charged with developing and maintaining the San Diego County Operational Area Emergency Plan. This Operational Area Emergency Plan should be considered a preparedness document - intended to be read and understood ***before*** an emergency. It is designed to include the San Diego County Operational Area as a part of the statewide emergency management system.

In 2004, the Homeland Security Presidential Directive (HSPD)-5, directed the United States Department of Homeland Security to develop and administer a National Incident Management System (NIMS), in order to provide a comprehensive national approach to incident management. NIMS unifies Federal, State, territorial, tribal, and local lines of government into one coordinated effort. On September 15, 2005, the Unified Emergency Services Organization issued a resolution adopting NIMS into the emergency management system.

The National Incident Management System (NIMS) released in December 2008 supersedes the March 2004 version of NIMS. The basic purpose, scope and principles of the document remain unchanged. The majority of changes impact the organization and readability of the document while ensuring that it adequately reflects the importance of preparedness.

Homeland Security Presidential Directive (HSPD)-5 also directed the development of the National Response Framework (NRF). The chart on page iii provides an outline of the Emergency Support Functions (ESF) of the NRF and the corresponding functional annexes of the Operational Area Emergency Plan.

This Operational Area Emergency Plan was reviewed by representatives of the jurisdictions and agencies in the Operational Area with responsibilities in the Plan. It is intended to be adopted by all of the jurisdictions in the Operational Area. The goal is to have standardized emergency plans throughout the Operational Area.

Comparison Chart for the
San Diego County Operational Area Emergency Plan
and the National Response Framework

National Response Framework Emergency Support Function (ESF)		San Diego County Operational Area Emergency Plan Corresponding Functional Annex	
#1	Transportation	Q	Evacuation
#2	Communications	I	Communications
#3	Public Works and Engineering	J	Construction and Engineering Operations
#4	Firefighting	B	Fire and Rescue Mutual Aid Operations
#5	Emergency Management	A	Emergency Management
#6	Mass Care, Emergency Assistance, Housing and Human Services	G	Care and Shelter Operations
#7	Logistics, Management and resource support	K	Logistics
#8	Public Health and Medical Services	D	Multi-Casualty Operations
		E	Public Health Operations
		F	Office of the Medical Examiner Operations
		M	Behavioral Health Operations
		O	Animal Services
#9	Search and Rescue	B	Fire and Rescue Mutual Aid Operations
#10	Oil and Hazardous Materials Response	H	Environmental Health Operations
		SAP*	Hazardous Materials Plan (including Oil Spill Element)
#11	Agriculture and Natural Resources	E	Public Health Operations
		O	Animal Services
#12	Energy	SAP*	Operational Area Energy Resiliency Plan
#13	Public Safety and Security	C	Law Enforcement Mutual Aid Operations
#14	Long-Term Community Recovery	R	Recovery
#15	External Affairs	L	Emergency Public Information

***SAP - San Diego County Stand-Alone Plan**

BASIC PLAN

I. Purpose, Scope, Situation And Assumptions

Purpose

The San Diego County Operational Area Emergency Plan describes a comprehensive emergency management system which provides for a planned response to disaster situations associated with natural disasters, technological incidents, terrorism and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of a comprehensive emergency management system and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The plan also identifies the sources of outside support, which might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private sector.

Every jurisdiction and Special District shall have an individual Emergency Operations Plan (EOP). The "Operational Area Emergency Plan" will support or supplement the plan for each local government. The plan is complete with 17 annexes (there is no Annex N):

Annex A	Emergency Management
Annex B	Fire and Rescue Mutual Aid Operations
Annex C	Law Enforcement Mutual Aid Operations
Annex D	Mass Casualty Operations
Annex E	Public Health Operations
Annex F	Department of the Chief Medical Examiner Operations
Annex G	Care and Shelter Operations
Annex H	Environmental Health Operations
Annex I	Communications and Warning Systems
Annex J	Construction and Engineering Operations
Annex K	Logistics
Annex L	Emergency Public Information
Annex M	Behavioral Health Operations
Annex O	Animal Services
Annex P	Terrorism
Annex Q	Evacuation
Annex R	Operational Area Recovery Plan

In addition, there are stand-alone emergency plans that are referenced within some of the above annexes. These plans are: 1) San Diego County Nuclear Power Plant Emergency Response Plan; 2) San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan; 3) Unified San Diego County Emergency Services Organization

Operational Area Energy Shortage Response Plan; 5) San Diego County Multi-Jurisdictional Hazard Mitigation Plan; 6) San Diego Urban Area Tactical Interoperable Communications Plan; and 7) San Diego County Terrorist Incident Emergency Response Protocol. They are, by reference, a part of this plan.

Scope

The Operational Area Emergency Plan (OAEP) defines responsibilities, establishes an emergency organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System.

The "Operational Area" consists of the county and each of its political subdivisions including Special Districts. The "Operational Area Coordinator" (OAC) is elected by the Unified Disaster Council, and is currently the County's Chief Administrative Officer.

During multi-jurisdictional emergencies, each jurisdiction and Special District is responsible for conducting and managing emergencies within its boundaries. The Operational Area Coordinator serves as the primary focal point for coordination of mutual aid, assistance, and information between jurisdictions and Special Districts.

The Operational Area Emergency Operations Center in Kearny Mesa will normally serve as the Operational Area Coordinator's point of contact. In some cases, Area Coordinators for specific disciplines may operate from other locations, or may be designated representatives of the Coordinator. When this is the case, all agencies will be advised of the point of contact.

Situation

No single jurisdiction or agency has the capability and resources to address all disasters or major emergency situations. The Unified San Diego County Emergency Services Organization was established for the purpose of providing and addressing disaster related problems on a regional basis.

The San Diego County Operational Area is located between Orange and Riverside Counties on the north and Mexico on the south, and between Imperial County to the east and the Pacific Ocean on the west, occupies the extreme southwest corner of both California and the United States.

The Operational Area is approximately 4,261 square miles in area, and varies in terrain from coastal to mountainous to desert. As of January 2009, the San Diego Association of Governments (SANDAG) lists a population estimate of 3,173,407 for the San Diego County Operational Area.

This "Operational Area Emergency Plan" has been developed to provide guidance for the San Diego County Operational Area based on the following objectives:

1. Provide a system for the effective management of emergency situations.
2. Identify lines of authority and relationships.

3. Assign tasks and responsibilities.
4. Ensure adequate maintenance of facilities, services, and resources.
5. Provide a framework for adequate resources for recovery operations.

Planning Assumptions

The following assumptions apply to this plan:

1. Emergency management activities are accomplished using SEMS and NIMS;
2. Emergency response is best coordinated at the lowest level of government involved in the emergency;
3. Local authorities maintain operational control and responsibility for emergency management activities within their jurisdiction, unless otherwise superseded by statute or agreement;
4. Mutual Aid is requested when needed and provided as available;
5. Mitigation activities conducted prior to the occurrence of a disaster result in a potential reduction in loss of life, injuries, and damage; and
6. Supporting plans and procedures are updated and maintained by responsible parties.

II. Concept Of Operations

General

It is the responsibility of government to undertake an ongoing comprehensive approach to emergency management in order to mitigate the effects of hazardous events. Local government has the primary responsibility for preparedness and response activities. When an emergency exceeds the local government's capability to respond, assistance is requested from other local jurisdictions, and State and Federal governments. In any case, the responsibility for and command of the incident remains with the local jurisdiction.

All jurisdictions within the San Diego Operational Area operate under the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). SEMS and NIMS are based on the Incident Command System (ICS) which is a management system designed to provide a structure for response to any emergency, large or small, and MACS, the Multi-Agency Coordination System. ICS is used nationally by many emergency services organizations, and has been in operation for about 20 years.

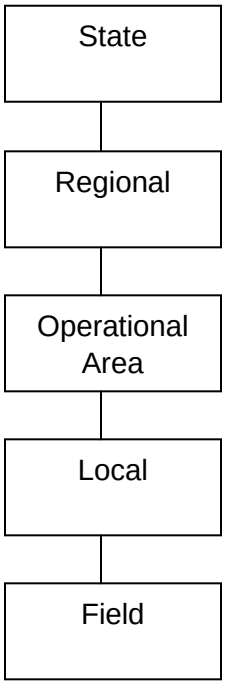
The Operational Area Emergency Plan is based on SEMS and NIMS and the concept that the emergency function of an agency will generally parallel its normal function. Those day-to-day activities, which do not contribute directly to the emergency operation, may need to be suspended for the duration of the emergency.

Specific operational concepts including the emergency response actions of the various agencies are reflected in the Annexes to this plan.

Fully activated, the Standardized Emergency Management System consists of the emergency management systems of all local jurisdictions (including Special Districts), Operational Areas (county-wide), Cal EMA Mutual Aid Regions (two or more counties) and State Government. Local jurisdictions would be responsible for directing and/or coordinating emergency operations, with the other levels being responsible for coordinating with and/or providing support to the local jurisdictions.

SEMS consists of five organizational levels, which are activated as necessary: field response, local government, operational area, region, and State (Chart 1).

Chart 1
The Five SEMS Organizational Levels



State – Statewide resource coordination integrated with federal agencies.

Regional – Manages and coordinates information and resources among operational areas.

Operational Area – Manages and/or coordinates information, resources, and priorities among all local governments within the boundary of a country.

Local – County, city of special districts.

Field – On-scene responders.

The State of California Emergency Plan identifies three levels of emergencies used to categorize the response. These same levels are used by the Operational Area and are common to all functional Annexes:

LEVEL I
A minor to moderate incident wherein local resources are adequate and available. A **LOCAL EMERGENCY** may or may not be proclaimed.

LEVEL II
A moderate to severe emergency wherein local resources are not adequate and mutual aid may be required on a regional or even statewide basis. **A LOCAL EMERGENCY** may or may not be proclaimed and a **STATE OF EMERGENCY** might be proclaimed.

LEVEL III
A major disaster wherein resources in or near the impacted area are overwhelmed and extensive state and/or federal resources are required. A **LOCAL EMERGENCY** and a **STATE OF EMERGENCY** will be proclaimed and a **PRESIDENTIAL DECLARATION OF EMERGENCY or MAJOR DISASTER** may be requested.

Hazard Assessment

San Diego's climate is Mediterranean in type - mild, sunny winters with occasional rainy periods of short duration, and warm, rainless summers. A mountain barrier crosses north to south through the eastern half of the Operational Area, separating desert to the east and semi-arid coastal plains to the west. The highlands on the coastal side of the barrier are a significant source of water, feeding the streams which descend their seaward slopes.

The San Diego County Operational Area is exposed to many hazards, all of which have the potential for disrupting communities, causing damage, and creating casualties. Possible natural hazards include earthquakes, floods, tsunamis, wildland fires, landslides, droughts, hurricanes, tropical storms and freezes. There is also the threat of a terrorism or war-related incident such as a nuclear, biological, chemical, or conventional attack. Other disaster situations could develop from a hazardous materials incident, conflagration, water or air pollution, major transportation accident, water, gas or energy shortage, nuclear power plant accident, or civil disorder.

In an effort to begin the process of hazard analysis for the Operational Area, and to supply emergency managers with a basic understanding of these hazards, hazard summaries have been included. (See Attachment A, Specific Hazards)

In light of the Operational Area's susceptibility and vulnerability to natural disasters and other hazards, continuing emphasis will be placed on emergency planning, training of full-time auxiliary and reserve personnel, public awareness and education, and assuring the adequacy and availability of sufficient resources to cope with such emergencies. The Unified Disaster Council (UDC) and member jurisdictions are involved in ongoing Public Education Programs. The programs focus on the need of individuals to be knowledgeable about the nature of disasters and proper responses to those disasters. They also encourage citizens to make the necessary preparations for disasters and emergencies.

Hazard Mitigation and Control

Emphasis will also be placed on mitigation measures to reduce losses from disasters, including the development and enforcement of appropriate land use, design and construction regulations.

The Cities’ Planning Departments and the County Department of Planning and Land Use have enforced earthquake building code standards for many years. Additionally, all projects requesting subdivisions are typically required to include an environmental assessment initial report, which provides site-specific information on existing natural hazards and other environmental concerns. Upon intake of all building permits and development projects, land use planners review the project site's topographic location (i.e., slope analysis), and proximity to a floodplain.

The Land Use Elements of the Cities' and County's General Plans are the primary policy bases which direct the physical development of the incorporated and unincorporated areas of the San Diego County Operational Area. They designate coastal beach, bluff areas, and floodplain as environmentally constrained areas, thus requiring a thorough environmental review and

implementation of appropriate measures to mitigate any adverse impacts. Additionally, the "rural" back country is subject to limitations of 4-8-20 acre parcel sizes in order to minimize degradation of watersheds, natural slopes, groundwater supplies, wildland fire safety and floodplain.

The Operational Area's member jurisdictions' Zoning Ordinances and the Uniform Building Code support mitigation efforts through the enforcement of fire codes, earthquake standards and requirements for water conservation devices. County subdivision regulations reduce the risk of fire, in that these regulations are a means of securing water systems of adequate size and pressure for fire fighting, and insure adequate roadway widths for emergency vehicle access, including maneuverability of fire trucks.

In 2010, the County and all of the jurisdictions in the County revised the San Diego County Multi-Jurisdictional Hazard Mitigation Plan. The purpose of the Plan is to enhance public awareness and understanding, create a decision tool for management, promote compliance with State and Federal program requirements, enhance local policies for hazard mitigation capability, provide inter-jurisdictional coordination of mitigation-related programming, and to achieve regulatory compliance.

III. Organization And Assignment Of Responsibilities

The County of San Diego staff has the overall responsibility to provide an effective emergency response in the unincorporated areas of the County. As previously stated, the County of San Diego Operational Area uses SEMS and NIMS. These emergency management systems provide not only for the local on-scene management of an incident, but also for the coordination of response activities between the jurisdictions.

General

1. The structure of the emergency organization is based on the following principles:

   A. Compatibility with the structure of governmental and private organizations.

   B. Clear lines of authority and channels of communication.

   C. Simplified functional structure.

   D. Incorporation into the emergency organization of all available personnel resources having disaster capabilities.

   E. Formation of special-purpose units to perform those activities peculiar to major emergencies.

2. A major emergency can change the working relationships between government and industry and among government agencies. For example:

   A. Consolidation of several departments under a single chief, even though such departments normally work independently.

B. Formation of special-purpose units (Situation Intelligence, Emergency Information, Management, and Radiological Defense) to perform functions not normally required. Personnel assigned to such units may be detached from their regular employment when the units are activated.

C. Formation of multiple agency or multiple jurisdiction commands to facilitate the response to an emergency.

3. Changes in the emergency organization as designed may be required to meet specific situations.

Coordinator of Emergency Services

The Coordinator of Emergency Services (Coordinator) for the Unified San Diego County Emergency Services Organization (Organization) also functions as the Vice-Chairperson of the Organization. The Coordinator is elected by the members of the Organization from among the County CAO, City Managers, or Chief Administrator of any participating agency.

Two additional persons may be selected from the staff of the Coordinator, or from the above group, to act as first and second alternates in the absence or inability of the Coordinator to serve, in which event such alternates shall have all the powers and authorities of the Coordinator. The second alternate shall only be empowered to exercise the powers and authorities of the Coordinator if the Coordinator and first alternate are absent or otherwise unable to serve.

Line of Succession

It is incumbent upon all levels of government to establish a line of succession of authority in the event that current officers are unable to carry out their responsibilities. For example, the Chief Administrative Officer (CAO) for the County is the Director of Emergency Services for the unincorporated area of the County. If the CAO is unable to serve in that capacity, and has not designated an acting CAO, individuals who hold permanent appointments to the following positions automatically serve as Acting CAO and Director of Emergency Services in the order shown. That person shall continue to serve until the CAO can resume his/her responsibilities or until the Board of Supervisors can appoint a successor. An individual serving as Acting CAO/Director has the authority and powers of the position of CAO/Director.

	Alternate
Assistant Chief Administrative Officer	First
General Manager/Deputy CAO Public Safety Group	Second
General Manager/Agency Director, Health and Human Services Agency	Third
General Manager/Deputy CAO, Land Use & Environment Group	Fourth
General Manager/Deputy CAO, Community Services Group	Fifth
General Manager/Chief Financial Officer, Finance & Gen. Gov. Group	Sixth

Seat of Government

It is incumbent upon all levels of government to designate temporary seats of government in the event the normal location is not available. For example, the normal seat of government for the

County of San Diego is located at the County Administration Center (CAC), 1600 Pacific Highway, San Diego, California. In the event this location is not available, the temporary seat of government will be located at the order of locations below, unless another location is specifically designated:

	Alternate
County Operations Center Annex (DPLU)	First
El Cajon Regional Center	Second
South Bay Regional Center	Third
Vista Regional Center	Fourth

All levels of government are required to provide for the continuity of government in the event that current officials are unable to carry out their responsibilities. The Unified San Diego County Emergency Services Organization has provided for a line of succession to the Coordinator of Emergency Services position on the Unified Disaster Council in the event of a major emergency.

Emergency Preparedness Structure

In this plan, local emergency operations are divided into the emergency functions indicated below. Specific details on functional, organizational and operational concepts, responsibilities for providing support to or accomplishing a given function, and applicable policies and procedures are provided in the Annexes specified in parenthesis. The Annexes also provide hazard-specific responses to be accomplished by the Emergency Management Staff and field forces.

The following matrix (see Figure 1) identifies the local agencies and private organizations responsible to the Operational Area for the functions listed below.

Figure 1 SAN DIEGO OA EOC ROLES/FUNCTIONAL RESPONSIBILITIES

		Finance & Gen. Govt.								PSG							HHSA				LUEG							CSG				External Support Agencies										
Agency Responsibilities Primary and Support Functions	**DEPTS./AGENCIES**	Board of Supervisors	CAO/ACAO/DCAOs	Assessor	Auditor and Controller	Chief Technology Office	County Counsel	Human Resources	Media & Public Relations	Public Safety Exec. Office	Office of Emergency Services	Sheriff	District Attorney	Medical Examiner	Probation	RACES	HHSA	Public Health Services	Behavioral Health Services	Emergency Medical Services	Agriculture	Air Pollution Control District	Environmental Health	Parks and Recreation	Planning and Land Use	Public Works	Veterinarian	Animal Services	General Services	Housing & Comm. Develop.	Purchasing & Contracting	Area Fire Coordinator	California Highway Patrol	American Red Cross	County Office of Education	Salvation Army	Volunteer San Diego	Humane Society	San Diego Gas & Electric	2-1-1 San Diego	County Water Authority
FUNCTIONS/RESPONS.																																								
Policy																																								
Emergency Proclamations		P	S				S				S																													
Public Information/JIC		S				S			P		S	S		S			S	S							S					S								S	
Policy Group			P		S		S		S		P	P		P				P					S			P			P		P									
EOC Director										S	P																													
Rumor Control									S		S																												P	
Safety Officer											S							S					P																	
Legal Advisor							P																																	
Security (EOC)												S			P																									
OPERATIONS																																								
Section Chief											P	S						S													S									
Alert/Warning									S		P	P																			S									
Law Enforcement												P	S		S	S																S								
Evacuation												P															S				S	S				S				
Traffic Control												P													S							S								
Fire & Rescue											S												S							P									
Hazardous Materials																						P																	
Radiological Protection											P											S																	
Health																	P	P																						
Medical Multi-Casualty												S		S			S	S		P											S	S								
Public Health																	S	P		S																				
Behavioral Health																			P																					
Care and Shelter																	P	P					S	S									P							
Animal Rescue																S		S								S		P									S			
Field Liaison											P				S	S																								
Utilities																													P								S		S
Construction and Engineering																									S	P														

P = Primary; S = Support

Figure 1 (Cont.) SAN DIEGO OA EOC ROLES/FUNCTIONAL RESPONSIBILITIES

				Finance & Gen. Govt.						PSG							HHSA				LUEG							CSG				External Support Agencies										
Agency Responsibilities Primary and Support Functions	**DEPTS./AGENCIES**	Board of Supervisors	CAO/ACAO/DCAOs	Assessor	Auditor and Controller	Chief Technology Office	County Counsel	Human Resources	Media & Public Relations	Public Safety Exec. Office	Office of Emergency Services	Sheriff	District Attorney	Medical Examiner	Probation	RACES	HHSA	Public Health Services	Behavioral Health Services	Emergency Medical Services	Agriculture	Air Pollution Control District	Environmental Health	Parks and Recreation	Planning and Land Use	Public Works	Veterinarian	Animal Services	General Services	Housing & Comm. Develop.	Purchasing & Contracting	Area Fire Coordinator	California Highway Patrol	American Red Cross	County Office of Education	Salvation Army	Volunteer San Diego	Humane Society	San Diego Gas & Electric	2-1-1 San Diego	County Water Authority
FUNCTIONS/RESPONS.																																								
PLANNING/INTELLIGENCE																																								
Section Chief										S	P				S																									
Situation Status										S	P				S	S							S	S																
Documentation										S	P				S																									
Technical Support																					S	S	S				S													
GIS											S													S	P															
Advanced Planning										S	P				S																									
LOGISTICS																																								
Section Chief																												S		P										
Supply/Procurement																												S		P										
Transportation												S																P						S						
Facilities																												P		S										
Personnel								P																																
EOC Support								P									S						S																	
Communications/IT						P					S	P				S																								
Volunteer Coordination								S																											P						
FINANCE/ADMIN.																																								
Section Chief										P	S																													
Time Unit										S	P																													
Compensation & Claims								S		S	P																													
RECOVERY*																																								
Recovery Lead											P															S															
Damage Assessment				S							S													P							S		S	S			S		S
Cost Accounting					P																																		
Donations Management																																		S		S	S			S	

*Activities may occur outside of EOC.

P = Primary; S = Support

Assignment of Responsibilities

The Unified San Diego County Emergency Services Organization consists of the County and the cities within the Operational Area. It was established in 1961 by signed agreement. The Agreement basically provides for "preparing mutual plans for the preservation of life and property and making provision for the execution of these plans in the event of a local emergency, state of emergency, and to provide for mutual assistance in the event of such emergencies". It also calls upon the County to provide such services as health, medical, traffic control, public information, and radiological safety, in addition to services provided by the Office of the County Medical Examiner.

The Unified Disaster Council is the policy making body of the Organization and is "empowered to review and approve emergency mutual aid plans and agreements, disaster preparedness plans, and such ordinances, resolutions, rules and regulations as are necessary to implement" them.

The Board of Supervisors is the governing body of the County and sets policy regarding disaster-related matters within the unincorporated areas of the County. The Chair of the Board also serves as Chair of the Unified Disaster Council.

The County Chief Administrative Officer (CAO) has two roles in an emergency situation if elected:

1. **Director** of Emergency Services in a situation involving only the unincorporated area of the Operational Area.
2. **Coordinator** of Emergency Services in a situation involving the unincorporated area and one or more cities, or one involving any two or more cities.

The Office of Emergency Services (OES) is the lead agency in the Operational Area's emergency response effort and serves as staff to the Coordinator of Emergency Services, as well as to the Unified Disaster Council (UDC) and its members.

Other County departments and agencies have emergency responsibilities, as identified in Figure 1. These agencies and departments are also responsible for developing and maintaining Standard Operating Procedures (SOPs) and designating alternate sites from which to operate.

Functional Annexes

Detailed responsibilities of all agencies and private organizations are provided in Annexes of this plan:

Emergency Management (Annex A)
An effective functional EOC is the key to successful emergency response and recovery operations. Local government employees conduct their daily business from offices that are widely dispersed; however, when a major emergency or disaster occurs, centralized

management is needed to enable coordinated response by the decision makers, other emergency service personnel, and representatives from any other organizations that have emergency responsibilities. Management is accomplished under emergency conditions by providing a single site from which key officials and staff operate.

With the decision makers located together, staff and other resources can be most effectively utilized and activities can be coordinated so that duplication of effort is avoided. The EOC provides a central location of authority and information and allows for face-to-face coordination among those persons who direct disaster response.

The following functions are performed in the EOC: receipt and dissemination of warning, management of emergency operations, collection and analysis of damage information, provision of emergency information and instructions to the public, and maintenance of communication to support EOCs of neighboring jurisdictions and special districts.

Local jurisdictions and Special Districts should designate specific primary and alternate locations that serve as Emergency Operations Centers. In the case of the County of San Diego, the primary and alternate EOC locations are: County Operations Center in Kearny Mesa (primary) and Kearny Mesa and City of Escondido.

In the Operational Area EOC the Policy Group consists of the senior executive of the jurisdiction or special district. For the County this would be the Chief Administrative Officer (CAO). For incorporated cities this position would be filled by the City Manager. Special Districts would fill this position with their senior executive. These senior executives fill the role of the jurisdiction's Director of Emergency Services. The Policy at the OA EOC Group includes the Director of the Office of Emergency Services (OES). The Policy Group also contains those representatives whom the senior executive believes are required for the particular situation or emergency.

The EOC Director is in charge of all aspects of the Emergency Operations Center including overseeing the six EOC Sections (Policy, Operations, Planning, Information/Intelligence, Logistics and Finance/Administration). Additionally, the EOC Director is responsible for all of the specialized functions that fall under the six sections including but not limited to Alert/Warning; Damage Assessment; Radiological Protection; Technical Support; EOC Support and Safety.

Fire and Rescue Mutual Aid Operations (Annex B)

All Fire Departments, Fire Protection Districts and other agencies with fire responsibilities. In San Diego County, Cal Fire is the Area Fire Coordinator. Tasks include: maintenance and coordination of Community Emergency Response Teams (CERT) fire protection and suppression, coordination of rescue operations, search and rescue, medical treatment and response, assisting with evacuation, and assisting with hazardous materials incidents, etc.

Fire mutual aid is coordinated through the Area Fire Coordinator. During a disaster, the Area Fire Coordinator will appoint at least one liaison representative from the fire community to the Operational Area EOC.

Law Enforcement Mutual Aid Operations (Annex C)

In San Diego County, the Sheriff is the Area Law Enforcement Coordinator. Law Enforcement

Mutual Aid Operations) Tasks include: maintaining law and order through enforcement of laws, rules, and regulations, conducting evacuations, establishing evacuation routes, providing aerial surveillance and intelligence, assisting with light rescue and medical response and managing communications systems. Supporting agencies may also include California Highway Patrol (CHP), the County of San Diego Probation Department and/or the District Attorney's Office.

Multi-Casualty Operations (Annex D)

The main agencies responsible are Health and Human Services Agency (HHSA), Emergency Medical Services (EMS) Division, and local Fire and Law Enforcement Agencies. Tasks include coordination of: medical response and resources within the jurisdiction, medical mutual aid, and medical registration and records. Supporting agencies may also include hospitals, community and private medical personnel. ambulance providers, public safety agencies, military medical personnel and the American Red Cross.

Public Health Operations (Annex E)

The main agency responsible is Health and Human Services Agency, (HHSA) Public Health Services (PHS). Since this function is provided by Health and Human Services Agency for all jurisdictions and special districts within the Operational Area, this function will be accomplished from the Operational Area EOC and HHSA Department Operations Center. Tasks include: coordinating public health response and resources, determining/identifying public health hazards, including hazardous materials, and providing response. HHSA may also establish standards for control of health hazards, provide technical guidance, advise the public about health hazards and provide Public Health Nurses as needed.

Medical Examiner Operations (Annex F)

Since this function is provided by the Medical Examiner for all jurisdictions and special districts within the Operational Area, this function will be accomplished from the Operational Area EOC. Tasks include recovering, identifying, coordinating disposition of the deceased, collect and preserve decedent property, and act as ex-officio Public Administrator. The Medical Examiner will also register deaths, prepare and coordinate lists of the deceased, maintain necessary records, inform law enforcement, health, public agencies, and media. Support staff may include former Medical Examiner employees, the Public Administrator, Coroner mutual aid, morticians and public safety agencies.

Care and Shelter Operations (Annex G)

Mass care services may be provided by a combination of any one of the following agencies: American Red Cross, County of San Diego, local governments and/or faith-based organizations. Care and shelter operations at the Operational Area EOC is coordinated by the Health and Human Services Agency (HHSA) and may include the following tasks: managing and operating reception and mass care centers, providing shelter registration and locator services, and registering displaced persons.

Environmental Health (Annex H)

This function is accomplished by the County of San Diego Department of Environmental Health (DEH) throughout the Operational Area. Accordingly, the coordination of environmental health activities will be accomplished from the Operational Area EOC. Tasks include coordinating of inspections for purity and usability of consumables, developing and supervision of methods and

procedures for vector and rodent control, conducting environmental surveys to determine risks and hazards and identifying hazardous materials released.

Communications (Annex I)
Managing 24-hour interoperable communications is completed by jurisdictional and Regional Communications System (RCS) staff. Responsibilities also include determining and maintaining appropriate systems available for emergency alert and warning.

Construction and Engineering Operations (Annex J)
Tasks include providing supervision for the repair, modification, and/or construction of emergency facilities and housing, inspecting Inspect damaged structures, performing field damage assessment, restoring, maintaining and operating essential services, such as roads, sewers, drainage and water systems. Supporting agencies include: Cal Trans, San Diego Gas and Electric and San Diego County Water Authority.

Logistics (Annex K)
Logistics and resource management during a disaster or emergency includes: maintaining an inventory of sources and providing for procurement and allocation of resources. Responsibilities may also include: assisting with coordination of Operational Area transportation, providing a system which gives authorized staff emergency buying power and procurement of supplies, equipment, personnel and services from public and/or private sources.

Emergency Public Information (Annex L)
Responsibilities include all aspects of public notification, alert and warning including the activation and operation of a Joint Information System (JIS) and or Operational Area Joint Information Center (JIC) to: schedule regular briefings for news media, write and distribute press releases, coordinate media interviews with local officials, maintain liaisons with State and Federal Public Information Officers (PIOs) and/or any other public information operations that are activated and prepare local EAS messages for dissemination and coordinating with 2-1-1 San Diego for public inquiry.

Behavioral Health Operations (Annex M)
Health and Human Services Agency, Behavioral Health Services is the lead agency responsible for providing emergency behavioral health intervention services, behavioral health counseling support to shelters, and Local Assistance Centers (LACs) and EOCs.

Animal Services (Annex O)
Departments of Animal Control or Animal Services are the main agencies responsible for coordination of: evacuating endangered animals, establishing temporary holding facilities, provision of care for injured animals and animals'' return to owners. Tasks may also include disposal of unclaimed, infirm, or dead animals, providing liaison with wildlife, ecological, and conservation groups. Supporting agencies may include the County Veterinarian, Humane Societies and R.A.C.E.S. (Radio Amateur Civil Emergency Service).

Terrorism (Annex P)
Annex P contains a brief summary of the San Diego County “Terrorist Incident Emergency Response Protocol.” The Protocol describes the countywide collective initial actions that should

be taken to prevent or mitigate the effects of a threatened or actual terrorist attack against any jurisdiction within the county.

Evacuation (Annex Q)

The San Diego County Operational Area (OA) Evacuation Annex is intended to be sued as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. This Annex outlines strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the San Diego OA.

Recovery (Annex R)

The OA Recovery Plan describes a coordinated system for disaster recovery operations in disaster situations. It delineates operational concepts relating to recovery, identifies components of the recovery organization, and describes the overall responsibilities intended to expedite public and private recovery. The OA Recovery Plan is designed to provide guidance to the County of San Diego and jurisdictions, agencies, organizations and businesses interacting with the County. Each jurisdiction and special district in the Operational Area must develop an individual recovery plan or recovery annex to complement existing Emergency Operations Plans (EOPs).

IV. Administration, Finance And Logistics

Under the Standardized Emergency Management System (SEMS), Special Districts are considered local governments. As such, they are included in the emergency planning efforts throughout the Operational Area. The Operational Area emergency organization, in accordance with SEMS, supports and is supported by:

1. Cities within the Operational Area
2. The County of San Diego
3. Special Districts
4. Other counties
5. The State of California
6. The Federal Government

The National Incident Management System (NIMS) provides a consistent nationwide template to enable Federal, State, local, and tribal governments and private-sector and nongovernmental organizations to work together effectively and efficiently to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity, including acts of catastrophic terrorism.

Mutual aid, including personnel, supplies, and equipment, is provided in accordance with the California Master Mutual Aid Agreement, and other local Mutual Aid Agreements. More information about mutual aid is contained in individual annexes, appendices and attachments within this Plan.

The private sector is an important part of the emergency organization. Business and industry own or have access to substantial response and support resources. Community Based Organizations (CBOs), or Non-Governmental Organizations (NGOs), provide valuable resources before, during, and after a disaster. These resources can be effective assets at any level. The Office of Emergency Services has established the ReadySanDiego Business Alliance. The Alliance will have a virtual connection to the Operational Area Emergency Operations Center via a social networking system fed through a RSS feed from WebEOC.

There are some City and County personnel who do not have specific task assignments. They are automatically designated by State Law as Disaster Service Workers during a disaster, and serve in the response effort.

A. "All public employees and all registered volunteers of a jurisdiction having an accredited disaster council are Disaster Service Workers", per the Government Code, Title I, Division 4, Chapter 8, and Labor Code, Part I, Division 4, Chapters 1 and 10.

B. The term public employees includes all persons employed by the State, or any County, City or public district.

C. Other personnel including volunteers can be quickly registered by OES as Disaster Service Workers, which provides Workers Compensation and liability coverage.

The Office of Emergency Services maintains a list of pre-registered volunteers affiliated with volunteer organizations that have been signed up as Disaster Service Workers.

It is imperative that local government maintain duplicate records of all information necessary for restoration of normal operations. This process of record retention involves offsite storage of vital computerized and paper-based data that can be readily accessible.

Preservation of vital records of the Unified Organization are routinely stored in records storage rooms at the Office of Emergency Services in printed hard copy form, on CD-ROM and on computer. Computer records are routinely backed up and stored separately from the hard drives. All personnel records are stored by the County Department of Human Resources at several locations throughout the Operational Area

V. Plan Development And Maintenance

The Office of Emergency Services coordinates the updating of the Operational Area Emergency Plan every three to four years. The Basic Plan and each annex is written and updated by the appropriate department or agency (ex: law enforcement personnel develop the law enforcement annex).

The Operational Area Plan Review Committee (OAPRC) of the Unified Disaster Council (UDC) reviews the plan, provides feedback, and approves revisions. Upon completion of their review, they recommend for adoption of the Plan to the UDC. The objective of any Emergency Management Organization is efficient and timely response during emergencies. The Operational Area Emergency Plan is the first step toward that objective. However, planning alone will not accomplish preparedness. Training and exercising are essential at all levels of government to make emergency operations personnel operationally ready.

The Homeland Security Exercise and Evaluation Program (HSEEP) is a capabilities and performance-based exercise program that provides a standardized methodology and terminology for exercise design, development, conduct, evaluation, and improvement planning. Recognizing this, the signatories to this plan agree to participate in scheduled HSEEP exercises. The date and type of exercises will be identified in the annual workplan of the Unified San Diego County Emergency Services Organization.

VI. Authorities And References

A. Unified San Diego County Emergency Services Organization, Fifth Amended Emergency Services Agreement, 2005.

B. County of San Diego Emergency Services Ordinance No. 8183, dated December 15, 1992.

C. County of San Diego Resolution adopting the California Master Mutual Agreement, dated December 11, 1950.

D. California Emergency Services Act, Chapter 7 of Division 1 of Title 2 of the Government Code.

E. California Emergency Plan (May, 1998) and sub-plans.

F. Governor's Orders and Regulations for a War Emergency, 1971.

G. Article 9, Emergency Services, Section 8605 of the Government Code, Operational Areas.

H. Petris (SEMS) SB 1841 Chapter 1069 - Amendments to the Government Code, Article 7, California Emergency Services Act.

I. California Master Mutual Aid Agreement.

J. California Fire and Rescue Emergency Plan.

K. Incident Command System, Field Operations Guide, ICS 420-1.

L. San Diego County Mutual Aid Agreement for Fire Departments.

M. San Diego County Animal Control Mutual Aid Agreement.

N. California Law Enforcement Mutual Aid Plan.

O. California Coroners Mutual Aid Plan.

P. Public Works Mutual Aid Plan.

Q. San Diego County Multi-Jurisdictional Hazard Mitigation Plan, March 2004.

R. San Diego Urban Area Tactical Interoperable Communications Plan, February 2006.

S. San Diego County Terrorist Incident Emergency Response Protocol, Draft, June 2005.

T. Unified San Diego County Emergency Services Organization Recovery Plan, June 2006.

U. Unified San Diego County Emergency Services Organization Resolution adopting the National Incident Management System dated September 15, 2005.

All Authorities and References listed apply to the Basic Plan and all the corresponding annexes. They are on file at the Office of Emergency Services. Also on file are other agreements with voluntary organizations and other governmental and private organizations.

VII. Glossary And Definitions

Abbreviations, Acronyms, and Definitions

Note: These abbreviations and definitions will assist in the understanding of terms and acronyms used in this plan, as well as some other terms used in emergency management.

ACRONYMS

A

AABB	American Association of Blood Banks
ABC	America's Blood Centers
ACAO	Assistant Chief Administrative Officer
ACP	Access Control Point
AEOC	Area Emergency Operations Center
AFC	Area Fire Coordinator
AGC	Associated General Contractors of America, Inc.
AGCESMP	Associated General Contractors Emergency Services Mobilization Program
ADL	Activities of Daily Living
ALARA	As Low as Reasonably Achievable
ALS	Advanced Life Support
ANRC	American National Red Cross
AP	Area Plan
APA	Area of Planning Attention
APCD	Air Pollution Control District
ARC	American Red Cross
ARES	Amateur Radio Emergency Service
ARR	Animal Rescue Reserve
ARRL	American Radio Relay League
ASD	AlertSanDiego.org
ASO	Administrative Services Organization
ASTREA	Aerial Support to Regional Enforcement Agencies (Sheriff's Helicopters)
ATC	Applied Technology Council

B

BCA	Building Contractors Association
BHNC	Base Hospital Nurse Coordinator

BIA Bureau of Indian Affairs
BLM Bureau of Land Management
BLS Basic Life Support
BUOC Business and Utility Operations Center
BOS Board of Supervisors

C

CAA California Ambulance Association
CAC County Administration Center
CAD Computer Aided Design
CAHAN California Health Alert Network
CALAPR California Accidental Release Prevention Program
CALEMA California Emergency Management Agency
CALFIRE California Department of Forestry and Fire Protection
CALRECYCLE California Department of Resources Recycling and Recovery
CALREP California Radiological Emergency Preparedness
CALTRANS California Department of Transportation
CALWAS California Warning System
CALWARN California Water/Wastewater Agency Response Network
CATS Consequences Assessment Tool Set
CANG California Air National Guard
CAO Chief Administrative Officer
CAP Civil Air Patrol
CAPS Community Access Phones System
CANG California Air National Guard
CBBS California Blood Bank Society
CBRNE Chemical, Biological, Radiological, Nuclear, or Explosive
CCC Council of Community Clinics
CCC California Conservation Corps
CCO County Communications Officer
CD Civil Defense
CDE Committed Dose Equivalent
CDF California Department of Forestry
CDHS California Department of Health Services
CDMG California Division of Mines and Geology
CDPH California Department of Public Health

CDSW	Clinical Disaster Services Workers
CENS	Community Emergency Notification System
CERO	Coronado Emergency Radio Organization
CERT	Community Emergency Response Team
CFS	Cubic Feet (per) Second
CHEMTREC	Chemical Transportation Emergency Center
CHD	Community Health Division
CHP	California Highway Patrol
CICCS	California Incident Command System Committee
CIF	Construction Industry Federation
CLEMARS	California Law Enforcement Mutual Aid Radio System
CLETS	California Law Enforcement Telecommunications System
CMA	California Medical Association
CNA	California Nurses Association
CNG	California National Guard
COA	Course of Action
COC	County Operations Center
COE	U.S. Army Corps of Engineers
COML	Communications Unit Leader
COMNAVBASE	Commander, Naval Base San Diego
COMSUBPACREP	Commander, Submarines, Pacific Representative West Coast
CONOPS	Concept of Operations
CPG	Civil Preparedness Guide
CPR	Cardiopulmonary Resuscitation
CPUC	California Public Utilities Commission
CRT	County Response Team
CSA	County Service Areas
CSTI	California Specialized Training Institute
CTN	Country Television Network
CUPA	Certified Unified Program Agency
CWA	County Water Authority

D

DAS	Dept. of Animal Services (County) - See Annex O
DAT	Disaster Action Teams
DBA	Doing Business As
DCAO	Deputy Chief Accounting Officer

DDA	Detailed Damage Assessment
DEH	Department of Environmental Health
DFG	Department of Fish & Game
DFO	Disaster Field Office
DHHS	Department of Health and Human Services
DHR	Department of Human Resources
DHS	Department of Homeland Security
DHUD	Department of Housing and Urban Development
DMAT	Disaster Medical Assistance Teams
DMORT	Disaster Mortuary Operations Response Team
DMPR	Department of Media and Public Relations
DOC	Department of Commerce
DOC	Department Operations Center
DOD	Department of Defense
DOE	Department of Energy
DOEd	Department of Education
DOI	Department of Interior
DOJ	Department of Justice
DOL	Department of Labor
DOSs	Department of State
DOT	Department of Transportation
DPLU	Department of Planning and Land Use (County)
DPP	Disaster Preparedness Plan
DPW	Department of Public Works
DRAT	Disaster Rapid Assessment Team
DRC	Disaster Recovery Center
DSA	Disaster Support Area
DSR	Damage Survey Report
DSS	California Department of Social Services
DSW	Disaster Service Worker
DWI	Disaster Welfare Inquiry
DWR	Department of Water Resources (State)

E

EAL	Emergency Digital Info Service
EAS	Emergency Alert System
ECC	Emergency Communications Center

ECHO I	Area Fire Coordinator
ECHO III	Echo III Command Vehicle
EDD	Employment Development Department
EHDPP	Environmental Health Disaster Preparedness Plan
EIC	Emergency Information Center
EIZ	Emergency Information Zone (SONGS)
EMA	Emergency Management Assistance
EMAC	Emergency Management Assistance Compact
EMAN	Emergency Medical Alert Network
EMI	Emergency Management Institute
EMMA	Emergency Managers Mutual Aid
EMP	Electromagnetic Pulse
EMS	Emergency Medical Services
EMSA	Emergency Medical Services Authority
EMT	Emergency Medical Technician
ENC	Emergency News Center (SONGS)
EOC	Emergency Operations Center
EOD	Explosive Ordinance Disposal
EOF	Emergency Operating Facility (SONGS)
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPI	Emergency Public Information
EPIC	Emergency Public Information Center
EPT	Exercise Planning Team
EPZ	Emergency Planning Zone (SONGS)
ERT	Emergency Response Team
ERT	Environmental Response Team
ESF	Emergency support functions
ESP	Emergency Storage Project
EW	Emergency Work

F

FAA	Federal Aviation Administration
FAS	First Aid Station
FAST	Federal Agency Support Teams
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission

FCO	Federal Coordinating Officer
FCP	Forward Control Point
FD	Fire Department
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FHWA	Federal Highway Administration
FIA	Federal Insurance Administration
FIRMARS	Fire Incident Response Mutual Aid Radio System
FLIR	Forward Looking Infrared
FOG	Field Operations Guide
FPD	Fire Protection District
FTS	Field Treatment Site
FWS	Fish & Wildlife Service

G H

GAR	Governor's Authorized Representative
GIS	Geographic Information System
GPMRC	Global Patient Movement Requirements Center
GSA	General Services Administration
HAZMAT	Hazardous Materials
H/CD	Housing and Community Development (County)
HDOC	Human Services Departmental Operations Center
HF	High Frequency
HHSA	Health and Human Services Agency
HIRT	HAZMAT Incident Response Team
HMMD	Hazardous Materials Management Division
HSAS	Homeland Security Advisory System
HSPD-5	Homeland Security Presidential Directive - 5
HST	Health Services Team
HUD	Department of Housing and Urban Development

I

IA	Individual Assistance
IAP	Incident Action Plan
IC	Incident Commander
ICBO	International Conference of Building Officials

ICC	Interstate Commerce Commission
ICP	Incident Command Post
ICS	Incident Command System
IDE	Initial Damage Report
IFG	Individual and Family Grants
IH	Incident History
IID	Imperial Irrigation District
IMT	Incident Management Team
INF	Immediate Needs Funding
IPC	Interjurisdictional Planning Committee (SONGS)
IPZ	Ingestion Pathway Zone (SONGS)
IRS	Internal Revenue Service
IRT	National Guard WMD Civilian Support Teams
IT	Information Technology

J K

JEOC	Joint Emergency Operating Center
JFO	Joint Field Office
JIC	Joint Information Center
JIS	Joint Information System
JNACC	Joint Nuclear Accident Coordinating Committee
JPA	Joint Powers Agreement
JTTF	Joint Terrorism Task Force
KI	Potassium Iodide

L

LAC	Local Assistance Center
LEAN	Law Enforcement Assistance Network
LNO	Liaison Officer

M

MACS	Multi-Agency Command System
MASA	Mutual Aid Staging Area
MCAS	Marine Corps Air Station

MCB	Marine Corps Base
MCC	Mass Care Center
ME	Medical Examiner
MEDMARS	Medical Mutual Aid Radio System
MHFP	Multihazard Functional Plan
MHOAC	Medical and Health Operational Area Coordinator
MIAS	Major Incident Alert System
MMRS	Metropolitan Medical Response System
MMST	Metropolitan Medical Strike Team
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPRS	Media and Public Relations Specialist
MRC	Medical Reserve Corps
MSA	Multipurpose Staging Area
MSL	Mean Sea Level
MVICC	Monte Vista Interagency Communication Center
MWD	Metropolitan Water District of Southern California

N

NALEMARS	National Law Enforcement Mutual Aid Radio System
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NASAR	National Association of Search and Rescue
NAWAS	National Warning System
NBC	Nuclear, Biological or Chemical
NCFD	North County Fire District
NCS	National Communications Systems
NDMS	National Disaster Medical System
NETRIMS	Internet Response Information Management System Site
NGO	Nongovernmental Organization
NIMS	National Incident Management System
NMCSD	Naval Medical Center San Diego
NMRT	National Medical Response Team
NNPP	Naval Nuclear Propulsion Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Interest

NOSC	Naval Ocean Systems Center
NRAD	Naval Research and Development
NRC	Nuclear Regulatory Commission
NRF	National Response Framework
NUREG	Nuclear Regulatory Commission Publication
NWS	National Weather Service

O

OA	Operational Area
OAC	Operational Area Coordinator
OAEPT	Operational Area Exercise Panning Team
OASIS	Operational Area Satellite Information System
ODAC	Off-site Dose Assessment Center (SONGS)
OES	Office of Emergency Services (Operational Area)
OPAREA	Operational Area
OPM	Office of Personnel Management
OSALT	Off-Site Agency Liaison Team
OSC	On-Scene Coordinator

P

PA	Public Assistance
PD	Police Department
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
PL 920	Public Law 920, 81st Congress, Federal Civil Defense Act of 1950
PL 93-288	Public Law 288, 93rd Congress, Disaster Relief Act of 1974
PO	Purchase Order
POLREP	Pollution Report
PPE	Personal Protective Equipment
PPP	Population Protection Planning
PRP	Patient Receptor Points
PSA	Public Service Announcement
PSG	Public Safety Group
PSI	Pounds Per Square Inch
PST	Pacific Strike Team
PVO	Private Voluntary Organizations

Q R

RACES	Radio Amateur Civil Emergency Service
R&D	Research and Development
RADEF	Radiological Defense
RADMON	Radiological Monitoring
RAT	Radiological Assistance Team
RATCF	Radar Air Traffic Control Facility (Miramar)
RCS	Road Crew Supervisor
RCS	Regional Communications System
RDD	Radiological Dispersion Device
RDMHC	Regional Disaster Medical Health Coordinator
RDO	Radiological Defense Officer
REOC	Regional Emergency Operations Center
REM	Radiation Equivalent Man
RESTAT	Resources Status
RHB	State Department of Health Services, Radiologic Health Branch
RIMS	Response Information Management System
RMO	Radiological Monitor Operator
RO	Radiological Officer
ROSS	Resource Ordering and Status System
RPA	Request for Public Assistance
RRT	Regional Response Team
RSP	Render-Safe Procedure
RSS	Receiving, Staging, and Storage
RUIS	Regional Urban Information System
RWQCB	Regional Water Quality Control Board

S

SAC	State Agency Coordinator
SANDAG	San Diego Association of Governments
SAP	Stand Alone Plan
SAR	Search and Rescue
SAST	State Agency Support Teams
SBA	Small Business Administration
SC	Special Consideration

SCC	Sheriff's Communication Center
SCE	Southern California Edison
SCO	State Coordinating Officer
SDGE	San Diego Gas and Electric
SDHA	San Diego Humane Society
SDIVOAD	San Diego/Imperial Counties Voluntary Organizations Active in Disasters
SDO	Staff Duty Officer
SDO	Standards Development Organizations
SEMS	Standardized Emergency Management System
SITREP	Situation Report
SO	Safety Officer
SO	Sheriff's Office
SOA	State Operating Authority
SOC	State Operations Center
SOCALEDISON	Southern California Edison
SONGS	San Onofre Nuclear Generating Station
SOP	Standard Operating Procedure
START	Simple Triage and Rapid Treatment
SWAT	Special Weapons and Tactics (Team)
SM	Scene Manager
SNS	Strategic National Stockpile
SWRCB	State Water Resources Control Board

T

TCP	Traffic Control Points
TEP	Temporary Evacuation Point
TEW	Terrorism Early Warning
TIC	Tactical Interoperable Communications
TSDF	Treatment, Storage and Disposal Facilities
TREAS	Department of the Treasury

U

UBH	United Behavioral Health
UCS	Unified Command System
UC	Unified Command
UDC	Unified Disaster Council

USA	United States Army
USAF	United States Air Force
US&R	Urban Search and Rescue
USC	United Stated Code
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDCESO	Unified San Diego County Emergency Services Organization
USFS	United States Forest Service
USGS	United States Geological Survey
USMC	United States Marine Corps
USN	United States Navy
USPS	United States Postal Service

V W X Y Z

WMD	Weapons of Mass Destruction
VA	Department of Veterans Affairs
VOAD	Voluntary Organizations Active in Disasters
VSC	Volunteer Services Coordinator

Numbers

3C's	Regional Command and Control Communications

DEFINITIONS

A

AERIAL RECONNAISSANCE
An aerial assessment of the damaged area which includes gathering information on the level and extent of damage and identifying potential hazardous areas for on-site inspections.

AGENCY
A division of government with a specific function offering a particular kind of assistance. In ICS, agencies are defined either as jurisdictional (having statutory responsibility for incident management) or as assisting or cooperating (providing resources or other assistance).

AGENCY REPRESENTATIVE
A person assigned by a primary, assisting, or cooperating Federal, State, local, or tribal government agency or private entity that has been delegated authority to make decisions affecting that agency's or organization's participation in incident management activities following appropriate consultation with the leadership of that agency.

AMATEUR RADIO EMERGENCY SERVICE (ARES)
A group of Amateur Radio Relay League (ARRL) members who provide health and welfare communications in times of emergency. Affiliated locally with the American Red Cross, all area hospitals and the Emergency Medical Services Division of the County Health Department.

AREA COMMAND (UNIFIED AREA COMMAND)
An organization established (1) to oversee the management of multiple incidents that are each being handled by an ICS organization or (2) to oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. Area Command has the responsibility to set overall strategy and priorities, allocate critical resources according to priorities, ensure that incidents are properly managed, and ensure that objectives are met and strategies followed. Area Command becomes Unified Area Command when incidents are multi-jurisdictional. Area Command may be established at an emergency operations center facility or at some location other than an incident command post.

AREA COMMANDER (NAVY)
The U.S. Navy command predesignated as having responsibility for implementing and executing actions for immediate and on-site mitigation of a radiological or reactor accident involving Naval Nuclear Propulsion Program facilities, vessels or equipment.

AREA OF PLANNING ATTENTION (APA)
Emergency Planning Zones (EPZs) established by NUREG 0654/FEMA-REP-1 are not applicable to naval nuclear powered plants. Because of differences in design and operation between naval nuclear propulsion plants and commercial nuclear power plants, the exposure to the public would be localized and not severe in the highly unlikely event of release of radioactivity from a vessel. To assist State and local authorities in assessing the need for any preplanning in the vicinity of naval bases where nuclear powered vessels are berthed, the Naval

Nuclear Propulsion Program has designated Areas of Planning Attention. The Area of Planning Attention extends 0.5 mile around the location where nuclear powered vessels are normally berthed (i.e., from the actual dock or pier where the ship is berthed – not from the Federal Property Boundary). The 0.5-mile distance is based on detailed, conservative analysis of worst-case and highly unlikely, but credible scenarios – the actual radius of the impacted downwind area will most likely be smaller.

ASSESSMENT
The evaluation and interpretation of measurements and other information to provide a basis for decision-making.

ASSIGNMENTS
Tasks given to resources to perform within a given operational period that are based on operational objectives defined in the IAP.

ASSISTANT
Title for subordinates of principal Command Staff positions. The title indicates a level of technical capability, qualifications, and responsibility subordinate to the primary positions. Assistants may also be assigned to unit leaders.

ASSISTNG AGENCY
An agency or organization providing personnel, services, or other resources to the agency with direct responsibility for incident management. See also Supporting Agency.

AVAILABLE RESOURCES
Resources assigned to an incident, checked in, and available for a mission assignment, normally located in a Staging Area.

B

BRANCH
The organizational level having functional or geographical responsibility for major aspects of incident operations. A branch is organizationally situated between the section and the division or group in the Operations Section, and between the section and units in the Logistics Section. Branches are identified by the use of Roman numerals or by functional area.

C

CHAIN OF COMMAND
A series of command, control, executive, or management positions in hierarchical order of authority.

CHECK-IN
The process through which resources first report to an incident. Check-in locations include the incident command post, Resources Unit, incident base, camps, staging areas, or directly on the site.

CHIEF
The ICS title for individuals responsible for management of functional sections: Operations, Planning, Logistics, Finance/Administration, and Intelligence (if established as a separate section).

CIVIL DEFENSE (CD) (See Emergency Management)
All activities and measures designed or undertaken (1) to minimize the effects upon the civilian population and Government caused, or which would be caused by natural disaster, techno-logical incidents, manmade disaster or an attack upon the United States, (2) to deal with the immediate emergency conditions which would be created by such events, and (3) to effectuate emergency repairs to, or the emergency restoration of vital utilities and facilities destroyed or damaged by such events. Was expanded to include Natural Disasters in the 1970s, the term is not used much anymore.

COMMAND
The act of directing, ordering, or controlling by virtue of explicit statutory, regulatory, or delegated authority.

COMMAND STAFF
In an incident management organization, the Command Staff consists of the Incident Command and the special staff positions of Public Information Officer, Safety Officer, Liaison Officer, and other positions as required, who report directly to the Incident Commander. They may have an assistant or assistants, as needed.

COMMON OPERATING PICTURE
A broad view of the overall situation as reflected by situations reports, aerial photography, and other information or intelligence.

COMMUNICATIONS UNIT
An organization unit in the Logistics Section responsible for providing communication services at an incident or an EOC. A Communications Unit may also be a facility (e.g., a trailer or mobile van) used to support an Incident Communications Center.

COMMUNITY EMERGENCY RESPONSE TEAMS – CERT
Community volunteers who have trained with their local fire department to provide assistance to the community in the event of a disaster or emergency.

COOPERATING AGENCY
An agency supplying assistance other than direct operational or support functions or resources to the incident management effort.

COORDINATE
To advance systematically an analysis and exchange of information among principals who have or may have a need to know certain information to carry out specific incident management responsibilities.

CUBIC FEET PER SECOND - C.F.S. (liquid)
Used to describe the amount of flow passing a given point in a stream channel. One cubic foot per second is equivalent to approximately 7.5 gallons per second.

D

DAMAGE ASSESSMENT
The appraisal or determination of the actual damage resulting from a disaster.

DECONTAMINATION/CONTAMINATION CONTROL

RADIOACTIVE MATERIALS
The reduction (normally by removal) of contaminating radioactive material from a structure, area, person, or object. Decontamination may be accomplished by treating (e.g., washing down or sweeping) the surface so as to remove the contamination. Contamination control is accomplished by isolating the area or object and letting the material stand so that the radioactivity is decreased as a result of natural decay. Contaminated material may be covered to prevent redistribution and/or to provide shielding.

OTHER HAZARDOUS MATERIALS
Decontamination consists of physically removing contaminants and/or altering the chemical properties to render them less toxic. How extensive decontamination must be depends on a number of factors, the most important being the type of contaminants involved. The more toxic or dangerous contaminants require more thorough decontamination procedures. Combining decontamination, the correct method of doffing personnel protective equipment, and the use of site work zones minimizes cross-contamination from protective clothing to wearer, equipment to personnel, and one area to another. Only general guidance can be given on methods and techniques for decontamination. The exact procedure to use must be determined after evaluating a number of factors specific to the incident.

DEPUTY
A fully qualified individual who, in the absence of a superior, can be delegated the authority to manage a functional operation or perform a specific task. In some cases, a deputy can act as relief for a superior and, therefore, must be fully qualified in the position. Deputies can be assigned to the Incident Commander, General Staff, and Branch Directors.

DISASTER
An occurrence threatening the health, safety, or property of a community or larger area, generally beyond the capability of a single jurisdiction to handle. Types of disasters include man-made, natural, or war-related; such as nuclear attack, earthquakes, tidal waves, floods, hurricanes, terrorism and dam failures.

DISASTER ACTION TEAMS
Established in small unincorporated communities as a focal point for emergency services in coordination with the American Red Cross (ARC) and the Office of Emergency Services (OES) and utilizes all volunteers.

DISASTER FIELD OFFICE (DFO)
A central facility established by the Federal Coordinating Officer within or immediately adjacent to disaster impacted areas to be utilized as a point of coordination and control for state and federal governmental efforts to support disaster relief and recovery operations.

DISASTER SERVICE WORKER
Includes public employees and any registered person impressed into service during a State of War Emergency, a State of Emergency, or a Local Emergency by a person having authority to command the aid of citizens in the execution of his duties. It does not include any member registered as an active firefighting member of any regularly organized volunteer fire department, having official recognition, and full or partial support of the county, city, town or district in which such fire department is located.

DISASTER SUPPORT AREA (DSA)
A special facility established on the periphery of a disaster area where disaster relief resources (personnel and material) can be received, stockpiled, allocated and dispatched into the disaster area. A segregated portion of the area may be used for the receipt and emergency treatment of casualty evacuees arriving via short-range modes (air and ground) of transportation and for the subsequent movement of a select number by heavy, long-range aircraft, to adequate medical care facilities. Therefore, such facilities will normally be located at, or in close proximity to, operable airports with runways capable of accommodating heavy aircraft and offering adequate space for supplies, equipment, portable medical facilities and other essential resources. Marine Corps Air Station (MCAS) Miramar and Brown Field on Otay Mesa have been designated DSAs in this region.

DISASTER WELFARE INFORMATION (DWI)
A service that provides health and welfare reports about relatives and certain other individuals believed to be in a disaster area and when the disaster caused dislocation or disruption of normal communications facilities precludes normal communications. This is a function of the American Red Cross.

DISPATCH
The ordered movement of a resource or resources to an assigned operational mission or an administrative move from one location to another.

DIVISION
The partition of an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the manageable span of control of the Operations Chief. A division is located within the ICS organization between the branch and resources in the Operations Section.

DOSIMETER

An instrument for measuring and registering total accumulated exposure to ionizing radiations.

E

ECONOMIC STABILIZATION
The intended result of governmental use of direct and indirect controls to maintain and stabilize the nation's economy during emergency conditions. Direct controls include such actions as the setting or freezing of wages, prices, and rents or the direct rationing of goods. Indirect controls can be put into effect by government through use of monetary, credit, tax, or other policy measures.

ELECTROMAGNETIC PULSE (EMP)
A large amount of energy is released by the detonation of a high altitude nuclear weapon. A small proportion of this energy appears in the form of a high intensity, short duration, electromagnetic pulse (EMP), somewhat similar to that generated by lightning. EMP can cause damage or malfunction in unprotected electrical or electronic systems. When nuclear weapons are detonated at high altitudes, EMP damage can occur essentially instantaneously over very large areas. All unprotected communications equipment is susceptible to damage or destruction by EMP, including broadcast stations, radios, televisions, car radios, and battery-operated portable transistor radios.

EMERGENCY (NIMS DEFINITION)
Absent a Presidentially declared emergency, any incident(s), human-caused or natural, that requires responsive action to protect life or property. Under the Robert T. Stafford Disasters Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.

EMERGENCY (STATE DEFINITION - ALSO SEE LOCAL EMERGENCY AND STATE OF EMERGENCY)
A disaster situation or condition of extreme peril to life and/or property, resulting from other than war or labor controversy, which is or is likely to be beyond local capability to control without assistance from other political entities.

EMERGENCY ALERT SYSTEM (EAS)
This system has replaced the Emergency Broadcast System. It is a modern system designed to alert the public of impending disaster or emergency conditions. It can be used for all hazards and utilizes many different media to notify the public, including; Cable TV, AM and FM radio, Satellite and the Weather Service Radio System.

EMERGENCY COMMUNICATIONS CENTER (ECC)
That facility designated by a political entity as a focal point for receiving and transmitting emergency communications.

EMERGENCY CONTROL CENTER
The location from which the NNPP Area Commander exercises management of overall emergency response, coordination of radiological assessments, management of recovery operations and coordination of emergency public information dissemination.

EMERGENCY MANAGEMENT (Command and Management)
The provision of overall operational control and/or coordination of emergency operations at each level of the Emergency Organization, whether it be the actual direction of field forces or the coordination of joint efforts of governmental and private agencies in supporting such operations.

EMERGENCY OPERATIONS
Comprises all actions that are taken during the emergency period to protect life and property, to care for affected people, and to temporarily restore essential community services.

EMERGENCY OPERATIONS CENTER (EOCs)
The physical location at which the coordination of information and resources to support domestic incident management activities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps, at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (e.g., fire, law enforcement, and medical services), by jurisdiction (e.g., Federal, State, regional, county, city, tribal), or some combination thereof.

EMERGENCY OPERATIONS PLAN (EOP)
The "steady-state" plan maintained by various jurisdictional levels for responding to a wide variety of potential hazards.

EMERGENCY ORGANIZATION
Civil government augmented or reinforced during an emergency by elements of the private sector, auxiliaries, volunteers, and persons impressed into service.

EMERGENCY PLANS
Those official and approved documents which describe principles, policies, concepts of operations, methods and procedures to be applied in carrying out emergency operations or rendering mutual aid during emergencies. These plans include such elements as continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information.

EMERGENCY PUBLIC INFORMATION (EPI)
Information that is disseminated primarily in anticipation of an emergency or during an emergency. In addition to providing situational information to the public, it also frequently provides directive actions required to be taken by the general public.

EMERGENCY PUBLIC INFORMATION CENTER (EPIC)
A facility located within, or immediately adjacent to, an Emergency Operations Center and/or Disaster Field Office, established and utilized as a central point for preparation and release of coordinated emergency public information.

EMERGENCY MANAGEMENT MUTUAL AID (EMMA)
A formalized system of providing emergency management assistance to emergency managers in jurisdictions which have been impacted by a disaster. It is based on the recognition of the fact

that we often don't have the manpower required in an individual jurisdiction to provide continuous 24 hour a day management during a disaster. This is coordinated through Cal EMA and assistance is brought in only to assist, not to direct and control.

EMERGENCY RESPONSE PROVIDER
Includes Federal, State, local, and tribal emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities. See Section 2 (6), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135 (2002). Also known as Emergency Responder.

EPICENTER
The geographical location of the point on the surface of the earth that is vertically above the earthquake focus. It is near the area of highest intensity shaking.

ESSENTIAL FACILITIES
Facilities that are essential for maintaining the health, safety, and overall well-being of the public following a disaster (e.g., hospitals, police and fire department buildings, utility facilities, etc.). May also include buildings that have been designated for use as mass care facilities (e.g., schools, churches, etc.). These facilities should be constructed to Seismic Zone 4 requirements or be Base-Isolated as well as being in an area that is as safe as possible.

EVACUATION
Organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.

EVENT
A planned, non-emergency activity. ICS can be used as the management system for a wide range of events, e.g., parades, concerts, or sporting events.

F

FALLOUT SHELTER
A habitable structure, or space therein, used to protect its occupants from radioactive fallout. Criteria (National Shelter Survey requirements) include a protection factor of 40 or greater, a minimum of 10 square feet of floor space per person, and at least 65 cubic feet of space per person. In unventilated underground space, 500 cubic feet of space per person is required. These facilities have existed in San Diego County, but they are no longer maintained, signed or stocked with supplies.

FEDERAL
Of or pertaining to the Federal Government of the United States of America.

FEDERAL COORDINATING OFFICER (FCO) (FEDERAL DEFINITION)
The person appointed by the President to coordinate federal assistance following an emergency or major disaster declaration.

FEDERAL DISASTER ASSISTANCE
Provides in-kind and monetary assistance to disaster victims, state, or local government by federal agencies under the provision of the Federal Disaster Relief Act and other statutory authorities of federal agencies.

FEDERAL DISASTER RELIEF ACT
Public Law 93-288, as amended, gives the President broad powers to supplement the efforts and available resources of State and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters.

FIRST AID STATION
A location where first aid may be administered to disaster victims.

FLASH FLOOD
A flood that reaches its peak flow in a short length of time (hours or minutes) after the storm or other event causing it. Often characterized by high velocity flows.

FLOOD OR FLOODING
Temporary inundation of normally dry land areas from the overflow of inland and/or tidal waters, and/or from the usual and rapid accumulation or runoff of surface waters from any source.

FLOOD FREQUENCY
A statistical expression of the average time period between flood equaling or exceeding a given magnitude. For example, a 100-year flood has a magnitude expected to be equaled or exceeded on the average of once every hundred years; such a flood has a one-percent chance of being equaled or exceeded in any given year. Often used interchangeably with “recurrence interval”.

FLOOD FRINGE
The portion of the floodplain outside of the floodway or coastal high hazard area but still subject to flooding. Sometimes referred to as “floodway fringe”. Also used to refer to areas subject to flooding by water with little or no velocity.

FLOOD PLAIN
Is commonly divided into a floodway: which carries flood waters and average flow and a flood-fringe: the land outside the floodway which is inundated by a 100-year flood.

FLOOD WARNING
The issuance and dissemination of information about an imminent or current flood.

FLOODWAY
The channel of a watercourse and those portions of the adjoining floodplain required to provide for the passage of the selected flood (normally the 100-year flood) with an insignificant increase in the flood levels above that of natural conditions.

FUNCTION
Function refers to the five major activities in ICS: Command, Operations, Planning, Logistics,

and Finance/Administration. The term function is also used when describing the activity involved, e.g., the planning function. A sixth function, Intelligence, may be established, if required, to meet incident management needs.

G H

GENERAL STAFF
A group of incident management personnel organized according to function and reporting to the Incident Commander. The General Staff normally consists of the Operations Section Chief, Planning Section Chief, Logistics Section Chief, and Finance/Administration Section Chief.

GROUP
Established to divide the incident management structure into functional areas of operation. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division. Groups, when activated, are located between branches and resources in the Operations Section. (See Division.)

HAZARD
Something that is potentially dangerous or harmful, often the root cause of an unwanted outcome.

HAZARD ANALYSIS
The analysis of situations or natural events having the potential for doing damage to life, property, resources, or the environment.

HAZARDOUS MATERIAL
Any substance or material in a quantity or form which may be harmful or injurious to humans, domestic animals, wildlife, economic crops or property when released into the environment. Hazardous materials are classified in this plan as chemical, biological, radiological or explosive.

> **Chemical** – Toxic, corrosive, or injurious substance because of inherent chemical properties and includes but is not limited to such items as petroleum products, paints, plastics, acids, caustics, industrial chemicals, poisons, drugs, mineral fibers (asbestos).
>
> **Biological** – Microorganisms or associated products which may cause disease in humans, animals or economic crops and includes pathogenic wastes from medical institutions, slaughterhouses, poultry processing plants, and imported unprocessed wood fibers.
>
> **Radiological** – Any radioactive substance emitting ionizing radiation at a level to produce a health hazard.
>
> **Explosive** – Material capable of releasing energy with blast effect in a split second upon activation; the released energy usually damages or destroys objects in close proximity to the blast.

I

INCIDENT
An occurrence or event, natural or human-caused, that requires an emergency response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, wild land and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

INCIDENT ACTION PLAN (IAP)
An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods.

INCIDENT COMMAND POST (ICP)
The field location at which the primary tactical-level, on-scene incident command functions are performed. The ICP may be collocated with the incident base or other incident facilities and is normally identified by a green rotating or flashing light.

INCIDENT COMMAND SYSTEM (ICS)
A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdiction boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

INCIDENT COMMANDER (IC)
The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

INCIDENT MANAGEMENT TEAM (IMT)
The IC and appropriate Command and General Staff personnel assigned to an incident.

INCIDENT OBJECTIVES
Statements of guidance and direction necessary for selecting appropriate strategy(s) and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow strategic and tactical alternatives.

INITIAL ACTION
The actions taken by those responders first to arrive at an incident site.

INITIAL RESPONSE
Resources initially committed to an incident.

INTELLIGENCE
The process of obtaining information to understand existing conditions, to foresee problems, and to make effective decisions.

INTELLIGENCE OFFICER
The intelligence officer is responsible for managing internal information, intelligence, and operational security requirements supporting incident management activities. These may include information security and operational security activities, as well as the complex task of ensuring that sensitive information of all types (e.g., classified information, law enforcement sensitive information, proprietary information, or export-controlled information) is handled in a way that not only safeguards the information, but also ensures that it gets to those who need access to it to perform their missions effectively and safely.

INTENSITY (ACTUAL EFFECTS)
A number describing the effects of an earthquake on man, on man-made objects, and on the earth's surface. It is a noninstrumented rating of the degree of shaking at a specified place as determined by experienced investigators working in the field. While an earthquake can have only one magnitude, it can have several intensities. Modified Mercalli Intensity Scale is most commonly used today in the United States. Grades of intensity are indicated by roman numerals I through XII.

J

JOINT EMERGENCY OPERATING CENTER (JEOC)
A facility established on the periphery of a disaster area to coordinate and control multi jurisdictional emergency operations within the disaster area. The JEOC will be staffed by representatives of select local, state and federal agencies and private organizations, and will have the capability of providing a communications link between any Mobile Emergency Operating Centers established in the disaster area and the State Operations Center in Sacramento.

JOINT INFORMATION CENTER (JIC)
A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.

JOINT INFORMATION SYSTEM (JIS)
Integrates incident information and public affairs into a cohesive organization designed to provide consistent, coordinated, timely information during crisis or incident operations. The mission of the JIS is to provide a structure and system for developing and delivering coordinated interagency messages; developing, recommending, and executing public information plans and

strategies on behalf of the IC; advising the IC concerning public affairs issues that could undermine public confidence in the emergency response effort.

JURISDICTION
A range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority. Jurisdictional authority at an incident can be political or geographical (e.g., city, county, tribal, State, or Federal boundary lines) or functional (e.g., law enforcement, public health).

K L

LIAISON
A form of communication for establishing and maintaining mutual understanding and cooperation.

LIAISON OFFICER
A member of the Command Staff responsible for coordinating with representatives from cooperating and assisting agencies.

LIFELINES
Includes the infrastructure for (storage, treatment, and distribution) fuel, communication, and water and sewage systems.

LIQUEFACTION
The phenomena by which the soil loses its ability to support buildings or other heavy objects. It is caused by the vibration of the earthquake loosening up sandy particles which allows underground water to rise towards the surface creating a type of quicksand.

LOCAL EMERGENCY (State Definition)
The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city or county, or city, caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, or earthquake or other conditions which are or are likely to be beyond the control of the services, personnel, equipment, and facilities of that political subdivision and require the combined forces of political subdivisions to combat.

LOCAL GOVERNMENT
A county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; an Indian tribe or authorized tribal organization, or in Alaska Regional Native Corporation; a rural community, unincorporated town or village, or other public entity. See Section 2 (10), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135 (2002).

LOGISTICS
Providing resources and other services to support incident management.

LOGISTICS SECTION
The section responsible for providing facilities, services, and material support for the incident.

M

MAJOR DISASTER
As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122), a major disaster is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of the cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant disaster assistance under this Act to supplement the efforts and available resources of the States, tribes, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

MAJOR INCIDENT ALERT SYSTEM (MIAS)
An alert system that Public Information Officers from various agencies in San Diego County can use to notify the media, via email, of any major incidents or emergencies occurring in San Diego County.

MANAGEMENT BY OBJECTIVE
A management approach that involves a four-step process for achieving the incident goal. The Management by Objectives approach includes the following: establishing overarching objectives; developing and issuing assignments, plans, procedures, and protocols; establishing specific, measurable objectives for various incident management functional activities and directing efforts to fulfill them, in support of defined strategic objectives; and documenting results to measure performance and facilitate corrective action.

MASS CARE FACILITY
A location such as a school at which temporary lodging, feeding, clothing, registration, welfare inquiry, first aid, and essential social services can be provided to disaster victims during the immediate/sustained emergency period. In San Diego Operational Area, may be used interchangeably with Mass Care Center (MCC) or congregate lodging facility.

MASTER MUTUAL AID AGREEMENT (State Definition)
The California Disaster and Civil Defense Master Mutual Aid Agreement made and entered into by and between the State of California, its various departments and agencies, and the various political subdivisions of the state.

METROPOLITAN MEDICAL STRIKE TEAM
A locally available, trained, nuclear, biological or chemical incident response team which will assist requesting jurisdictions with immediate response issues to an NBC event.

MITIGATION
The activities designed to reduce or eliminate risks to persons or property or to lessen the actual

or potential effects or consequences of an incident. Mitigation measures may be implemented prior to, during, or after an incident. Mitigation measures are often informed by lessons learned from prior incidents. Mitigation involves ongoing actions to reduce exposure to, probability of, or potential loss from hazards. Measures may include zoning and building codes, floodplain buyouts, and analysis of hazard related data to determine where it is safe to build or locate temporary facilities. Mitigation can include efforts to educate governments, businesses, and the public on measures they can take to reduce loss and injury.

MOBILIZATION

The process and procedures used by all organizations (Federal, State, local, and tribal) for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

MODIFIED MERCALLI SCALE

An observed measurement indicating the shaking intensity or damage caused by an earthquake. Scale has 12 intensity grades which express degree of earth movement. (See Earthquake Intensity)

MULTI-AGENCY COORDINATION ENTITY

A multi-agency coordination entity functions within a broader Multi-agency Coordination System. It may establish the priorities among incidents and associated resource allocations, deconflict agency policies, and provide strategic guidance and direction to support incident management activities.

MULTI-AGENCY COORDINATION SYSTEM

Multi-agency Coordination Systems provide the architecture to support coordination for incident prioritization, critical resource allocation, communications systems integration, and information coordination. The components of Multi-agency Coordination Systems include facilities, equipment, emergency operation centers (EOCs), specific multi-agency coordination entities, personnel, procedures, and communications. These systems assist agencies and organizations to fully integrate the subsystems of the NIMS.

MULTI-JURISDICTIONAL INCIDENT

An incident requiring action from multiple agencies that each have jurisdiction to manage certain aspects of an incident. In ICS, these incidents will be managed under Unified Command.

MULTIPURPOSE STAGING AREA (MSA)

A predesignated location such as a County/District Fairgrounds having large parking areas and shelter for equipment and operators, which provides a base for coordinated localized emergency operations, a rally point for mutual aid coming into an area, and a site for post-disaster population support and recovery activities.

MUTUAL-AID AGREEMENT

Written agreement between agencies and/or jurisdictions that they will assist one another on request, by furnishing personnel, equipment, and/or expertise in a specified manner.

MUTUAL AID REGION (State Definition)
A subdivision of the State emergency services organization, established to facilitate coordination of mutual aid and other emergency operations within an area of the state consisting of two or more operational areas.

MUTUAL AID STAGING AREA
A temporary facility established by the State Office of Emergency Services within, or adjacent to, affected areas. It may be supported by mobile communications and personnel provided by field or headquarters staff from state agencies, as well as personnel from local jurisdictions throughout the state.

N

NATIONAL
Of a nationwide character, including the Federal, State, local, and tribal aspects of governance and polity.

NATIONAL DISASTER MEDICAL SYSTEM
A cooperative asset-sharing partnership between the U.S. Department of Health and Human Services, the U.S. Department of Veterans Affairs, the U.S. Department of Homeland Security, and the U.S. Department of Defense. NDMS provides resources for meeting the continuity of care and mental health services requirements of the Emergency Support Function 8 in the Federal Response Plan.

NATIONAL INCIDENT MANAGEMENT SYSTEM
A system mandated by HSPD-5 that provides a consistent nationwide approach for Federal, State, local, and tribal governments; the private-sector, and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among Federal, State, local, and tribal capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the ICS; Multi-agency Coordination Systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking, and reporting of incident information and incident resources.

NATIONAL RESPONSE FRAMEWORK
A plan mandated by HSPD-5 that integrates Federal domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan.

NATIONAL WARNING SYSTEM (NAWAS)
The Federal portion of the Civil Defense Warning System, used for the dissemination of warning and other emergency information from the Warning Centers or Regions to Warning Points in each State.

NAVAL NUCLEAR PROPULSION PROGRAM (NNPP)
The NNPP is a joint program of the U.S. Department of Energy and the U.S. Navy. All naval nuclear propulsion repair work and operations on naval nuclear ships, tenders and submarines

or at nuclear capable public and private shipyards, naval stations and submarine bases are under the regulatory authority of the Naval Nuclear Propulsion Program pursuant to the Atomic Energy Act and Executive Order 12344 (enacted as permanent law in 42 USC 7158).

NONGOVERNMENTAL ORGANIZATION
An entity with an association that is based on interests of its members, individuals, or institutions and that is not created by a government, but may work cooperatively with government. Such organizations serve a public purpose, not a private benefit. Examples of NGOs include faith-based charity organizations and the American Red Cross.

O

OPERATIONAL AREA (State Definition)
An intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area.

OPERATIONAL PERIOD
The time scheduled for executing a given set of operation actions, as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not over 24 hours.

OPERATIONS SECTION
The section responsible for all tactical incident operations. In ICS, it normally includes subordinate branches, divisions, and/or groups.

P Q

PERSONNEL ACCOUNTABILITY
The ability to account for the location and welfare of incident personnel. It is accomplished when supervisors ensure that ICS principles and processes are functional and that personnel are working within established incident management guidelines.

PLANNING MEETING
A meeting held as needed prior to and throughout the duration of an incident to select specific strategies and tactics for incident control operations and for service and support planning. For larger incidents, the planning meeting is a major element in the development of the Incident Action Plan (IAP).

PLANNING/INTELLIGENCE SECTION
Responsible for the collection, evaluation, and dissemination of operational information related to the incident, and for the preparation and documentation of the IAP. This section also maintains information on the current and forecasted situation and on the status of resources assigned to the incident.

PLATE TECTONICS
The study of the origin, development and movement of the broad structural plates of the earth. The movement of the plates accounts for the earthquake, volcanic and tsunami activity

experienced around the world.

PREPAREDNESS
The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process. Preparedness involves efforts at all levels of government and between government and private-sector and nongovernmental organizations to identify threats, determine vulnerabilities, and identify required resources. Within the NIMS, preparedness is operationally focused on establishing guidelines, protocols, and standards for planning, training and exercises, personnel qualification and certification, equipment certification, and publication management.

PREPAREDNESS ORGANIZATIONS
The groups and fora that provide interagency coordination for domestic incident management activities in a non-emergency context. Preparedness organizations can include all agencies with a role in incident management, for prevention, preparedness, response, or recovery activities. They represent a wide variety of committees, planning groups, and other organizations that meet and coordinate to ensure the proper level of planning, training, equipping, and other preparedness requirements within a jurisdiction or area.

PREVENTION
Actions to avoid an incident or to intervene to stop an incident from occurring. Prevention involves actions to protect lives and property. It involves applying intelligence and other information to a range of activities that may include such countermeasures as deterrence operations; heightened inspections; improved surveillance and security operations; investigations to determine the full nature and source of the threat; public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and, as appropriate, specific law enforcement operations aimed at deterring, preempting, interdicting, or disrupting illegal activity and apprehending potential perpetrators and bringing them to justice.

PRIVATE SECTOR
Organizations and entities that are not part of any governmental structure. It includes for-profit and not-for-profit organizations, formal and informal structures, commerce and industry, and private voluntary organizations (PVO).

PROCESSES
Systems of operations that incorporate standardized procedures, methodologies, and functions necessary to provide resources effectively and efficiently. These include resources typing, resource ordering and tracking, and coordination.

PUBLIC INFORMATION OFFICER (PIO)
A member of the Command Staff responsible for interfacing with the public and media or with other agencies with incident-related information requirements.

PUBLICATIONS MANAGEMENT
The publications management subsystem includes materials development, publication control, publication supply, and distribution. The development and distribution of NIMS materials is

managed through this subsystem. Consistent documentation used in a particular incident regardless of the location or the responding agencies involved.

QUALIFICATION AND CERTIFICATION
This subsystem provides recommended qualification and certification standards for emergency responders and incident management personnel. It also allows the development of minimum standards for resources expected to have an interstate application. Standards typically include training, currency, experience, and physical and medical fitness.

R

RACES
Radio Amateur Civil Emergency Service, a radio-communication service carried on by licensed non-commercial radio stations while operating on specifically designated segments of the regularly allocated amateur frequency bands under the direction of authorized local, regional, Federal civil defense officials pursuant to an approved civil defense communications plan.

RADIOACTIVE FALLOUT
The process or phenomenon of the gravity-caused fallback to the earth's surface of particles contaminated with radioactive materials from a cloud of this matter formed by a nuclear detonation. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion. Delayed (worldwide) fallout consists of the smaller particles which ascend into the upper troposphere and into the stratosphere and are carried by the winds to all parts of the earth. Delayed fallout is brought to earth mainly by rain or snow, over extended periods ranging from months to years with relatively little associated hazard.

RADIOLOGICAL PROTECTION
The organized effort, through warning, detection, and preventive and remedial measures, to minimize the effect of nuclear radiation on people and resources.

RADIOLOGICAL MONITOR
An individual trained to measure, record, and report radiation exposure and exposure rates; provide limited field guidance on radiation hazards associated with operations to which he/she is assigned; and perform operator's checks and maintenance on radiological instruments.

RECEPTION AREA
This refers to a location separate from staging areas, where resources report in for processing and out-processing. Reception Areas provide accountability, security, situational awareness briefings, safety awareness, distribution of IAPs, supplies and equipment, feeding, and bed down.

RECOVERY
The development, coordination, and execution of service- and site- restoration plans; the reconstitution of government operations and services; individual, private sector, non-governmental and public-assistance programs to provide housing and to promote restoration;

long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; post-incident reporting; and development of initiatives to mitigate the effects of future incidents.

RECOVERY PLAN
A plan developed by a State, local, or tribal jurisdiction with assistance from responding Federal agencies to restore the affected area.

REGIONAL EMERGENCY OPERATIONS CENTER (REOC)
It serves as a coordination point for resource requests from Operational Areas. There are three REOCs in California. The Southern Regional Emergency Operations Center is located in Los Alamitos and is staffed by the State Office of Emergency Services.

RESOURCES
Personnel and major items of equipment, supplies, and facilities available or potentially available for assignment to incident operations and for which status is maintained. Resources are described by kind and type and may be used in operational support or supervisory capacities at an incident or at an EOC.

RESOURCE MANAGEMENT
Efficient incident management requires a system for identifying available resources at all jurisdictional levels to enable timely and unimpeded access to resources needed to prepare for, respond to, or recover from an incident. Resource management under the NIMS includes mutual-aid agreements; the use of special Federal, State, local, and tribal teams; and resource mobilization protocols.

RESOURCE UNIT
Functional unit within the Planning Section responsible for recording the status of resources committed to the incident. This unit also evaluates resources currently committed to the incident, the effects additional responding resources will have on the incident, and anticipated resource needs.

RESPONSE
Activities that address the short-term, direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs.

Response also includes the execution of emergency operations plans and of mitigation activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes. As indicated by the situation, response activities include applying intelligence and other information to lessen the effects or consequences of an incident; increased security operations; continuing investigations into nature and source of the threat; ongoing public health and agriculture surveillance and testing processes; immunizations, isolation, or quarantine; and specific law enforcement operations aimed at preempting, interdicting, or disrupting illegal activity, and apprehending actual perpetrators and bringing them to justice.

S

SAFETY OFFICER
A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations and for developing measures for ensuring personnel safety.

SECTION
The organizational level having responsibility for a major functional area of incident management, e.g., Operations, Planning, Logistics, Finance/Administration, and Intelligence (if established). The section is organizationally situated between the branch and the Incident Command.

SHELTER AREA
An area, inside existing structures, which by reason of location, may be expected to provide some degree of safety for people, records, and equipment.

SPAN OF CONTROL
The number of individuals a supervisor is responsible for, usually expressed as the ratio of supervisors to individuals. (Under the NIMS, an appropriate span of control is between 1:3 and 1:7.)

STAGING AREA
Location established where resources can be placed while awaiting a tactical assignment. The Operations Section manages Staging Areas.

STANDARD OPERATING PROCEDURES (SOPs)
A set of instructions having the force of a directive, covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness.

STATE
When capitalized, refers to any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any possession of the United States. See Section 2 9140, Homeland Security Act of 2002, Pub. L. 107-296,116 Stat. 2135 (2002).

STATE COORDINATING OFFICER (SCO) (Federal Definition)
A person appointed by the Governor to act for the State in cooperation with the Federal Coordinating Officer.

STATE EMERGENCY ORGANIZATION
The agencies, boards, and commissions of the executive branch of state government and affiliated private sector organizations. In California, the Governor's Office of Emergency Services.

STATE OF EMERGENCY (State Definition)
A duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as air pollution, fire, flood, storm,

epidemic, riot, or earthquake or other conditions, other than conditions resulting from a labor controversy, or conditions causing a “state of war emergency”, which conditions, by reason of their magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat.

STATE OF WAR EMERGENCY (State Definition)
The condition which exists immediately, with or without a proclamation thereof by the Governor, whenever the state or nation is directly attacked by an enemy of the United States, or upon the receipt by the state of a warning from the federal government that such an enemy attack is probable or imminent.

STATE OPERATIONS CENTER (SOC)
A facility established by the State Office of Emergency Services Headquarters for the purpose of coordinating and supporting operations within a disaster area, and controlling the response efforts of state and federal agencies in supporting local governmental operations. The SOC will be staffed by representatives of state and federal agencies and private organizations, and will have the capability of providing a communications link to a Joint Emergency Operating Center established on the periphery of a disaster area and to any Mobile Emergency Operating Centers established in the disaster area.

STORM SURGE
A rise above normal water level on the open coast due only to the action of wind stress on the water surface. A storm surge resulting from a hurricane or other intense storm also includes the rise in level due to atmospheric pressure reduction as well as that due to wind stress. A storm surge is more severe when it occurs in conjunction with a high tide.

STRATEGIC
Strategic elements of incident management are characterized by continuous long-term, high-level planning by organizations headed by elected or other senior officials. These elements involve the adoption of long-range goals and objectives, the setting of priorities; the establishment of budgets and other fiscal decisions, policy development, and the application of measures or effectiveness,

STRIKE TEAM
A set number of resources of the same kind and type that have an established minimum number of personnel.

STRATEGY
The general direction selected to accomplish incident objectives set by the IC.

SUPPORTING TECHNOLOGIES
Any technology that may be used to support the NIMS is included in this subsystem. These technologies include orthophoto mapping, remote automatic weather stations, infrared technology, and communications, among various others.

T

TASK FORCE
Any combination of resources assembled to support a specific mission or operational need. All resources elements within a Task Force must have common communications and a designated leader.

TECHNICAL ASSISTANCE
Support provided to State, local, and tribal jurisdictions when they have the resources but lack the complete knowledge and skills needed to perform a required activity (such as mobile-home park design and hazardous material assessments).

TERRORISM
Under the Homeland Security Act of 2002, terrorism is defined as activity that involves an act dangerous to human life or potentially destructive of critical infrastructure or key resources and is a violation of the criminal laws of the United States or of any State or other subdivision of the United States in which it occurs and is intended to intimidate or coerce the civilian population or influence a government or affect the conduct of a government by mass destruction, assassination, or kidnapping. See Section 2 (15), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 213 5 (2002)

TEMPORARY EVACUATION POINTS
Large generally open areas such as parking lots where people to be evacuated will gather until transportation arrives or a shelter location is announced. Little if any services will be provided.

THREAT
An indication of possible violence, harm, or danger.

TRAFFIC CONTROL POINTS (TCP)
Places along movement routes that are manned by emergency personnel to direct and control the flow of traffic.

TOOLS
Those instruments and capabilities that allow for the professional performance of tasks, such as information systems, agreements, doctrine, capabilities, and legislative authorities.

TORNADO
Relatively short-lived local storms. They are composed of violently rotating columns of air that descend in the familiar funnel shape from thunderstorm cloud systems. Tornadoes usually travel from west to east.

TRIBAL
Any Indian tribe, band, nation, or other organization group or community, including any Alaskan Native Village as defined in or established pursuant to the Alaskan Native Claims Settlement Act (85stat. 688) [43 U.S.C.A. and 1601 et seq.], that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as

Indians.

TSUNAMI
One or a series of long-period great sea waves generated by earth movement or volcanic eruption under the sea. Often incorrectly called tidal waves, “tsunami” is a Japanese word which means “waves that come into harbors”.

TYPE
A classification of resources in the ICS that refers to capability. Type 1 is generally considered to be more capable than Types 2, 3, or 4, respectively, because of size; power; capacity; or, in the case of incident management teams, experience and qualifications.

U

UNIFIED AREA COMMAND
A Unified Area Command is established when incidents under an Area Command are multi-jurisdictional. (See Area Command.)

UNIFIED COMMAND
An application of ICS used when there is more than one agency with incident jurisdiction or when incidents cross-political jurisdictions. Agencies work together through the designated members of the UC, often the senior person from agencies and/or disciplines participating in the UC, to establish a common set of objectives and strategies and a single IAP.

UNIT
The organizational element having functional responsibility for a specific incident planning, logistics, or finance/administration activity.

UNITY OF COMMAND
The concept by which each person within an organization reports to one and only one designated person. The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective.

V X Y Z

VOLUNTEER
For purposes of the NIMS, a volunteer is any individual accepted to perform services by the lead agency, which has authority to accept volunteer services, when the individual performs services without promise, expectation, or receipt of compensation for services performed. See, e.g., 16 U.S.C. 742f© and 29CFR553.101.

Attachment A
SPECIFIC HAZARDS

I. Major Earthquake

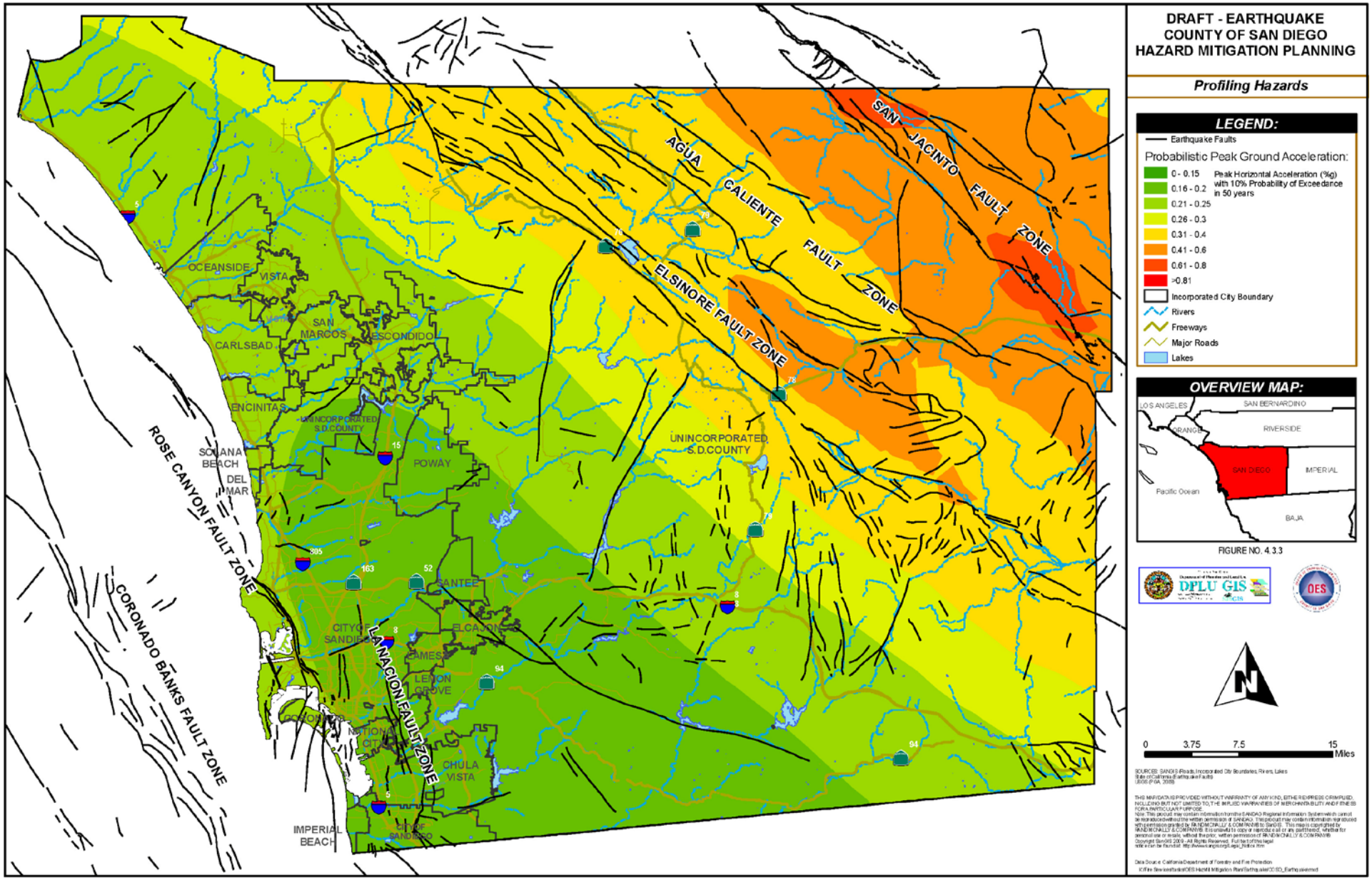
A major earthquake occurring in the San Diego County Operational Area could cause many casualties, extensive property damage, fires, flooding, and other ensuing hazards. The effects could be aggravated by aftershocks and by the secondary effects of fire, landslides, and dam failure. The time of day and season of the year would also have a profound effect on the number of dead and injured and the amount of damage sustained. Such an earthquake could be catastrophic in its effect on the population and could exceed the response capability of the Operational Area. Safety assessments and disaster relief support would be required from all local governments and private organizations as well as the state and federal governments.

Extensive search and rescue operations would be required to assist trapped or injured persons. Emergency medical care, food and temporary shelter would be needed by injured or displaced persons. Identification and burial of the dead would pose difficult problems; and public health would be a major concern. Mass evacuation could be essential to save lives, particularly in areas below dams. Many families would be separated, particularly if the earthquake should occur during working hours and emergency operations could be seriously hampered by the loss of communications; damage to transportation routes; and by the disruption of public utilities and services.

Extensive local, state and federal assistance would be immediately required and could continue over an extended period. These recovery efforts would require activities such as: removal of debris and clearing roadways, demolishing unsafe structures, assisting in reestablishing public services and utilities, and providing continuing care and welfare for the affected population, including temporary housing for displaced persons.

History

Historical records reveal damaging earthquakes in the San Diego region during 1800, 1812, 1862 and 1986. Although it is impossible to accurately identify many of the faults associated with the earlier quakes, it is known that the 1986 quake occurred on the Coronado Bank Fault and that the other quakes occurred as a result of one of the faults along the coastal region including the Rose Canyon Fault, or the Coronado Bank Fault. The earliest recorded damaging earthquake in the San Diego area was the November 22, 1800 earthquake of an estimated 6.5 magnitude, which damaged both the San Diego and San Juan Capistrano Missions. In 1890 and 1899 the San Jacinto Fault produced quakes stronger than 6.0 magnitude. In 1910, the Elsinore Fault produced a 6.0 magnitude quake, the largest to date on the fault. The San Clemente Fault was responsible for a 5.9 magnitude quake in 1951. In 1968, the San Jacinto Fault was responsible for a 6.8 magnitude earthquake near Ocotillo Wells (see Earthquake Faults in San Diego County).


DRAFT - EARTHQUAKE
COUNTY OF SAN DIEGO
HAZARD MITIGATION PLANNING
Profiling Hazards
LEGEND:
Earthquake Faults
Probabilistic Peak Ground Acceleration:
0 - 0.15
0.16 - 0.2
0.21 - 0.25
0.26 - 0.3
0.31 - 0.4
0.41 - 0.6
0.61 - 0.8
>0.81
Peak Horizontal Acceleration (%g) with 10% Probability of Exceedance in 50 years
Incorporated City Boundary
Rivers
Freeways
Major Roads
Lakes
OVERVIEW MAP:
LOS ANGELES
SAN BERNARDINO
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL
Pacific Ocean
BAJA
FIGURE NO. 4.3.3
DPLU GIS
OES
N
0 3.75 7.5 15
Miles
SAN JACINTO FAULT ZONE
AGUA CALIENTE FAULT ZONE
ELSINORE FAULT ZONE
ROSE CANYON FAULT ZONE
CORONADO BANKS FAULT ZONE
LA NACION FAULT ZONE
OCEANSIDE
VISTA
SAN MARCOS
ESCONDIDO
CARLSBAD
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
UNINCORPORATED S.D.COUNTY
SANTEE
EL CAJON
LA MESA
LEMON GROVE
NATIONAL CITY
CHULA VISTA
IMPERIAL BEACH
CITY OF SAN DIEGO

Local Faults

San Andreas Fault

According to the theory of plate tectonics, the earth's crust is fractured into a series of "plates" that have been moving very slowly over the Earth's surface for millions of years. Two of these moving plates meet in western California; the boundary between them is the San Andreas Fault. The Pacific Plate (on the west) moves northwestward relative to the North American Plate (on the east), causing earthquakes along the fault. The San Andreas is the major fault on an intricate fault network that cuts through the California coastal region. The entire San Andreas fault system is more than 800 miles long and extends to depths of at least 10 miles within the Earth. Many smaller faults branch from and join the San Andreas Fault System. Most scientists agree that a "great" earthquake, one stronger than 7.5 magnitude on the Richter scale, is inevitable somewhere along the San Andreas. On October 17, 1989, a 7.1 magnitude earthquake occurred in the southern Santa Cruz Mountains. It is presumed that the earthquake, which was responsible for at least 63 deaths, over 3,500 injuries and approximately five and one half billion dollars worth of damage, occurred along the northern portion of the San Andreas fault zone. The Loma Prieta earthquake (as it is commonly referred to) is the largest earthquake to strike the San Francisco Bay area since the 1906 San Francisco earthquake (estimated 8.3 magnitude).

The Northridge earthquake which occurred on January 17, 1994 was also significant from the standpoint that it caused similar death and destruction and was the first earthquake to be identified as occurring on a vertically thrusting fault. The 6.8 magnitude Northridge earthquake was responsible for 57 deaths, over 9,000 injuries and at least 20 billion dollars worth of damage.

The mounting concern about the future results from the lack of recent faulting activity along the southernmost section of the San Andreas, extending from the Grapevine southeast to the Salton Sea. This section has had no major ruptures for about 200 years. Geological evidence suggests there has not been a great earthquake there for at least 560 years. This segment of the fault is considered to be "locked" and waiting to release hundreds of year’s worth of stored up energy. A U.S. Geological Survey study projects that there is a 60% chance of a magnitude 7 or greater earthquake on the southern portion of the San Andreas within the next 25-30 years.

Elsinore Fault

The Elsinore Fault is a branch of the San Andreas Fault System. Although it originates near downtown Los Angeles, it enters the San Diego Operational Area in north county through the communities of Rainbow and Pala; it then travels in a southeasterly direction through Lake Henshaw, Santa Ysabel and Julian; then down into Anza-Borrego Desert State Park at Agua Caliente Springs, ending at Ocotillo. The Elsinore Fault is approximately 40 miles east of downtown. It is estimated that a maximum probable event on this fault is on the order of a magnitude 6.9 to 7.0 on the Richter scale with an approximate 100-year recurrence interval. The maximum credible event for this fault is considered to be a magnitude 7.6 earthquake. Of primary concern are the two aqueducts within the Operational Area that cross over the fault. Depending upon the magnitude of an earthquake on this fault, the potential is high for a severe disruption of the water supply to the region.

San Jacinto Fault

The San Jacinto Fault is also a branch of the San Andreas Fault System. The fault branches off from the major fault as it passes through the San Bernardino Mountains. Traveling southeasterly, the fault passes through Clark Valley, Borrego Springs, Ocotillo Wells, and then east toward El Centro in Imperial County. The San Jacinto Fault is the most active large fault within San Diego Operational Area. It is estimated that a maximum probable event on this fault is on the order of a magnitude 7.5 to 7.8. This type of event would cause severe damage in the town of Borrego Springs and Ocotillo Wells, with moderate damage in the coastal area. This fault was responsible for a magnitude 6.5 quake near Ocotillo Wells that occurred in 1968.

Rose Canyon Fault

The Rose Canyon Fault is part of the Newport-Inglewood fault zone, which originates to the north in Los Angeles, and the Vallecitos and San Miguel Fault Systems to the south in Baja California. The Newport-Inglewood fault was the source of the 6.3 magnitude 1933 Long Beach earthquake. The San Miguel Fault was the site of two 1956 earthquakes of magnitude greater than 6.0, and one in 1949 greater than 5.7. All were within 65 km of San Diego. The Rose Canyon Fault extends inland from La Jolla Cove, south through Rose Canyon, along the east side of Mission Bay, and out into San Diego Bay. The Rose Canyon Fault is considered to be the greatest potential threat to San Diego as a region, due to its proximity to areas of high population. The fault is considered to be active with a maximum probable event of magnitude 6.9. Some geologists think that the Rose Canyon Fault may be "locked" and that to release the building strain, 25 3.5 magnitude earthquakes would need to occur each year.

Coronado Bank Fault

The Coronado Bank Fault extends in a northwest-southeast direction, about 10 miles offshore. The Coronado Bank Fault was responsible for the June 29, 1983 quake measuring a magnitude 4.6, with an epicenter about 10 miles west of the International Border. It is estimated that a maximum credible event on this fault is on the order of a magnitude 7.2.

San Clemente Fault

The San Clemente Fault which lies about 40 miles off La Jolla is the largest offshore fault. It is 110 miles or more in length and was the cause of a magnitude 5.9 earthquake offshore in 1951. It is estimated that a maximum probable event on this fault would be a magnitude 7.7.

Damage Scenarios

In the last several years much attention has been given to the probability of major earthquakes occurring within or near the San Diego Operational Area. Several preliminary studies have indicated that San Diego could suffer significant damage from a major earthquake along the Rose Canyon, Elsinore, San Jacinto or San Andreas (southern segment) faults. The following is a threat summary based on some of the hypotheses that geologists have put forth. For the purposes of this discussion, we will limit our focus on a postulated maximum credible magnitude 6.9 earthquake on the Rose Canyon fault.

Intensity

The postulated maximum credible magnitude 6.9 Rose Canyon Fault earthquake would produce a relatively small onshore intensity IX area, including Mission Valley east of Highway 163, Mission Bay, Pacific Beach, coastal La Jolla, Sorrento Valley and coastal north county communities from Del Mar to Cardiff-by-the-Sea.

The rest of coastal metropolitan San Diego plus El Cajon, Santee, Poway, Escondido, and San Marcos would experience intensity VIII. Areas of firmer ground and/or areas which lie further inland will generally be subjected to intensity VII or less. (See Figure 2, Modified Mercalli Intensity Scale)

Structure Damage

A. Older residential construction is predominant on the mesa south of Mission Valley (Mission Hills, Hillcrest, North Park, Kensington), Old Town, and parts of Point Loma, La Jolla, Ocean Beach, Pacific Beach, Coronado, and National City. Some of these are within the forecasted intensity IX zone. It has been observed that nearly 750 unreinforced masonry buildings exist in this high-risk area.

B. Older light industrial and commercial buildings are primarily in the Downtown area. Since much of the commercial growth of San Diego occurred during and since World War II, a large concentration of pre-1940 industrial construction does not exist, as it does in other cities. Redevelopment in downtown areas such as Horton Plaza and the Gaslamp Quarter has eliminated many older buildings. An intensity of VIII could result in considerable damage to older, unreinforced masonry buildings as well as older inadequately reinforced structures.

C. Modern high-rise buildings in Downtown San Diego, Coronado, Loma Portal, Mission Valley and Mission Bay may experience significant damage resulting from ground failure. This will strongly depend on the nature of the individual building foundations.

Lifeline Damage Assessment

For the purpose of this overview, lifelines will be defined as those systems which transport or distribute goods, people, energy, information, and waste.

The effect on lifeline components depends critically on event location and size. Surface rupture clearly poses the greatest threat to lifelines. In the case of the postulated Rose Canyon Fault earthquake, less than one-half of the impacted fault is onshore. It is estimated that in a magnitude 6.9 event the surface displacement could be as much as 80cm (31.5 inches).

Obviously this amount of movement would cause severe damage of lifelines crossing the fault zone.

Highways and Roads

The Rose Canyon Fault crosses and runs closely parallel to several main roads and highways. One can assume that Torrey Pines Road near La Jolla Shores, and Ardath Road as well as Interstate 5 (and roads crossing it) from about La Jolla Village Drive to Old Town will all be subject to closure following the postulated earthquake. Although total collapse is not expected, it is possible that vertical displacement will occur, prohibiting normal use. It is also possible that shaking may induce failure of the built-up approaches to these roads and highways, even though the structures themselves may survive intact. The closure of these roads will seriously impair access to emergency workers trying to assist the affected areas, particularly the beach areas.

Gas and Electric

Gas feeder lines running through Mission Valley cross the fault between Mission Bay and Old Town. It is expected that fault displacement will be small in this area, however, the possibility of a gas line rupture and potential explosion would remain. Although no long-term damage to overhead transmission lines is anticipated by San Diego Gas and Electric (SDG&E), it is very probable that transmission of a significant portion of the power to affected communities will be interrupted. This decrease in electrical power may cause shortages/outages throughout the area.

Water and Sewer

The damage to water and sewer lines will be immediate. Primary water lines that feed Pacific Beach cross the fault near Balboa Avenue. The effects of sewer line ruptures along the fault line will cause even greater problems. These lines are within the fault zone and extend to Mission Valley. Road flooding caused by breaks in either the water or sewer system and by overloading the sewer system may hamper ground transportation. The health aspects of sewage spills may not pose an immediate danger, but require prompt attention to avoid a longer term hazard.

Other Damages and Effects

A review of the potential effects of this postulated magnitude 6.9 earthquake should include analysis of the following areas: airports, essential facilities, communications, military, railroads, marine facilities (particularly Mission Bay), petroleum fuels, and nearby water reservoirs, tsunamis, landslides, disruption of water supply, and liquefaction.

The major air facilities (public, private, and military) are expected to have runways sufficiently intact to be capable of landing disaster relief military C-130 and C-141 cargo aircraft.

Figure 2

MODIFIED MERCALLI INTENSITY SCALE

A. Not felt except by very few under especially favorable conditions.

B. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.

C. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.

D. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motor cars rock noticeably.

E. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of fallen plaster or damaged chimneys. Damage slight.

F. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

G. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken; noticed by persons driving motor cars.

H. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.

I. Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

J. Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.

K. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.

L. Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.

II. Hazardous Substance Emergencies

Background

The San Diego Operational Area covers approximately 4,200 square miles and houses a large and diverse industry base. A wide variety of hazardous substances are used or generated throughout the Operational Area. Emergencies involving the release of these substances occur daily. Although these incidents may potentially occur anywhere in the Operational Area, the majority occur in areas of highest population density. For example, as many as 85% of the incidents that the HAZMAT Incident Response Team (HIRT) responds to are contained within the I-5 - 805 corridor.

In the present context, the term "hazardous substance" is understood to include both hazardous materials and hazardous wastes. A hazardous material is defined as "Any substance or material in a quantity or form which may be harmful or injurious to humans, domestic animals, wildlife, economic crops or property when released into the environment. Hazardous materials can be classified as chemical, biological, radiological or explosive." These substances are commonly used in industry, agriculture, medicine and research. Hazardous wastes are a subcategory of hazardous materials and include the chemical by-products of industrial processes that utilize hazardous materials.

Emergencies involving hazardous substances are often generically termed "hazardous materials incidents" or "hazardous materials spills." Included are any releases of hazardous substances into the water, ground, or air which pose a real or potential threat to the public health or the environment.

Types of Hazardous Substance Emergencies

Illegal Drug Manufacturing

Illegal methamphetamine manufacturing occurs in all parts of the San Diego County Operational Area. Meth labs have been found in cars, vans, trucks, rental housing, private residences, mini-storage warehouses, and motels. Wastes from the manufacture of illegal drugs have been found in remote as well as populated areas, on private and public property, in parks, school yards and play areas.

Transportation

A great number of hazardous materials incidents in the San Diego Operational Area involve transportation accidents on streets and roadways. Because a number of factors make rail shipment impractical, hazardous materials are transported primarily by truck within the Operational Area. Since the Operational Area's freeways and many of its surface streets are often congested, this increases the possibility that a hazardous materials transporter may be involved in an accident.

Fixed Facilities

A. Hazardous Materials Handlers and Hazardous Waste Generators

Many facilities in the San Diego Operational Area store and use large numbers of hazardous materials, and generate numerous hazardous wastes. Academic institutions and allied industries, particularly their research components, handle many hazardous substances.

Several aerospace and electronics industries in the San Diego Operational Area also store and use large quantities of hazardous substances.

Agriculturally-based establishments are also of concern because they store large amounts of pesticides.

B. Treatment, Storage, and Disposal Facilities (TSDFs)

Although efforts to solve hazardous waste problems currently emphasize waste reduction, many types of facilities are necessary to effectively manage the Operational Area's hazardous waste stream. There are six main groups of hazardous waste facilities:

- Transfer and Storage Facilities
- Aqueous Treatment Facilities
- Organics Recycling Facilities
- Solidification or Stabilization Facilities
- Incinerators
- Residuals repositories

Not all of these facility types are currently found in the San Diego Operational Area. Each facility presents special concerns with respect to hazardous substance emergencies. This includes issues such as the proximity of the facility to sensitive populations, the types of wastes treated, and the nature of the treatment processes used.

Releases to Surface Waters

Hazardous substance emergencies involving releases to surface waters may include bays, estuaries, streams, or lakes. There are many possible sources of releases to surface waters. These include releases of sewage both from overflows and breaks of lines, spills from commercial and recreational vessels, intentional and unintentional spills through storm drains, and releases from businesses and industries adjacent to bodies of water.

Abandoned Wastes/Illegal Disposal

Abandoned wastes typically include substances left behind by facilities and businesses vacating premises.

Illegal disposal of hazardous waste includes activities such as night dumping along roadsides and in open areas, and underground burial. Since the early 1980s, the implementation of strict laws and regulations, such as the Resource Conservation and Recovery Act (RCRA), has made these practices more difficult than in the past. However, a number of factors ensure that such activities may continue to occur. These include the following:

A. As of August 8, 1990 the land disposal of all untreated hazardous waste is prohibited under the Hazardous and Solid Waste Amendments of RCRA.

B. The costs of proper disposal are high and continue to increase.

C. The San Diego Operational Area's current treatment and disposal capabilities are inadequate to handle the hazardous waste generated within the Operational Area.

D. Treatment and disposal facilities for hazardous wastes must be carefully selected, operated, and monitored to ensure the safety of human lives and the environment.

Because of these issues, and because industrial processes will continue to generate hazardous waste, unauthorized disposal of these materials will continue to be an issue of concern. Therefore, emergency responses will continue to be required for events resulting from such activities for some time to come.

III. Imminent/Actual Flooding

Floods are a natural component of the hydrological cycle. The hydrological cycle is the evaporation of water from the sea into the air, back onto the land as precipitation, returning eventually to the sea.

Sometimes rain falls in such abundance that the ground becomes saturated causing streams, rivers, and lakes to exceed their natural capacities as the water attempts to find its way to the sea.

Floods strike in a variety of forms including: sea surges driven by strong storms; tsunamis resulting from seismic activity; inland riverine flooding resulting from excess rain, reservoir overtopping or failure, melting snow, a waterway blockage from landslide, or the inappropriate placement of structures along a floodplain. A flood is any relatively high streamflow which overtops the natural or artificial banks in any reach of a stream. Floods are compared on the basis of their recurrence over a period of years (i.e., the average number of times a flood of a given magnitude is likely to occur). The 100-year flood is a flood which has the probability of being equaled or exceeded once every 100 years. It is also expressed as a 1% probability of being equaled or exceeded in any given year.

Floods can generally be classified as slow rise or flash floods. Slow rise floods are often preceded by a gradual increase in water level, and with it, an increased concern for preparedness. Traffic control, news releases, sandbagging, and evacuation are all tools that can

be used in combating the slow rise flood. Conversely, flash floods can happen anywhere and often occur without much warning. They are most common in mountain canyons, dry creek beds, and high deserts. There are no slow-rise floods in San Diego County. The watersheds are all small enough that reaction time is relatively short. There are no watersheds in San Diego County that have a longer response time, hence the need for immediate response when heavy rains occur. The National Weather Service's definition of a flash flood is a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level.

Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters. Once flooding begins, personnel will be needed to assist in rescuing persons trapped by flood water, securing utilities, cordoning off flooded areas and controlling traffic. These actions often overtax local agencies, requiring outside resources.

Local Situation

The San Diego Operational Area is normally a land of little rainfall and dry rivers. Geologic conditions have produced streams which run across deep beds of alluvial sand and gravel for most of their courses, so that normal low flow drainage takes place underground. In spite of these hydrological conditions, severe floods have occurred in the Operational Area.

One unusual characteristic of the hydrology of the San Diego Operational Area should be kept in mind when considering the possibility of flooding. The Southern California/Western Arizona area has the greatest variability of runoff in the United States. The western watershed of the San Diego Operational Area extends about 80 miles north from the Mexican border and some 45 miles east from the Pacific Ocean. From west to east, there are about 10 miles of rolling, broken coastal plain; 10 to 15 miles of foothill ranges with elevations of 600 to 1,700 feet; and approximately 20 miles of mountain country where elevations range from 3,000 to 6,000 feet. This western watershed constitutes about 75% of the Operational Area, with the remaining 25% mainly desert country.

Within the Operational Area there are over 3,600 miles of rivers and streams which threaten residents and over 200,000 acres of flood-prone property. Seven principle streams originate or traverse through the unincorporated area. From north to south they are the Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, Otay, and Tijuana Rivers.

In recent years, flood damage in the Operational Area has resulted mainly from intense pockets of rainfall striking areas 5 to 20 miles in diameter. This localization is due to two general effects; (1) during widespread winter storms, isolated rain cells or squalls can enter from the ocean and become locally intense as lifting occurs in the hills and (2) in summer, localized thermal updrafts can generate extremely severe precipitation, particularly when global weather conditions bring moist upper air to California from the Gulf of California. Some of the county's largest flash floods have occurred in the deserts in East County. The most dramatic flooding occurs when a tropical storm affects the desert area directly. Summer thunderstorms in the desert foothills frequently send small flash floods rushing across roads.

Reservoirs

Approximately 40 reservoirs have been built in the Operational Area for water conservation, 13

of which are major reservoirs. The reservoirs on the upper reaches can reduce the levels of the flood peaks in the lower basins. The reservoir's effectiveness, as a means of flood control, is highly dependent upon the water level in the reservoir at the time of the storm. However, these facilities are designed and operated for water conservation and storage, and are not expected to eliminate the major part of the flood hazard on any of the streams in the region (see Figure 3, Rivers and Reservoirs).

ALERT Flood Warning System

Following the 1980 floods, which caused approximately $120 million in damage, a joint project between the County of San Diego, the City of San Diego, and the National Weather Service was funded in order to devise the ALERT rainfall/runoff data collection system. In 1982, the ALERT Flood Warning System was completed, becoming the first countywide real-time flood warning system in the nation.

The system currently consists approximately 100 stations that report real-time data by radio to receiving base stations located at the County Flood Control office in Kearny Mesa and the National Weather Service office in Rancho Bernardo. Near-real-time data is reported to the River Forecast Center in Sacramento by means of telephone transfer. With the system, it is now possible to stay well informed on the real-time status of a storm or a particular river through the combined efforts of prediction from the National Weather Service and the field data produced by the ALERT Flood Warning System.

Drainage Basins

A drainage basin is comprised of all the land that drains into a given stream. Drainage basins are generally named after the principal stream flowing into the ocean or bay. The principal drainage basins in the Operational Area are as follows, from north to south:

A. San Mateo Creek

Area: 218 square miles - 25% in Riverside County – 10% in Orange County

Tributaries: San Onofre, Las Pulgas and Aliso Creeks

Dams: None

Land Use: Military reservation, National Forest

Flood Damage: Roads, communications

B. Santa Margarita River

Area: 750 square miles - 75% in Riverside County

Tributaries: Del Luz, Temecula and Murrieta Creeks

Dams: Vail Dam in Riverside County

Land Use: Military reservation

Flood Damage: Roads, cropland, communications

C. San Luis Rey River

Area: 565 square miles

Tributaries: Fallbrook, Moosa Canyon and Pauma Creeks

Dams: Lake Henshaw

Land Use: Rural, some urban development in Bonsall, San Luis Rey, and Oceanside

Flood Damage: Roads, crops, homes, utilities

D. Escondido Creek

Area: 211 square miles, including Buena Vista, San Marcos and Agua Hedionda Creeks

Tributaries: Reidy Creek

Dams: Lake Wohlford, Dixon

Land Use: Rural, urban development throughout Escondido with flood control systems

Flood Damage: Homes, crops, utilities, lagoon-marsh area

E. San Dieguito River

Area: 350 square miles

Tributaries: Santa Ysabel, Santa Maria, and Del Mar Creeks

Dams: Sutherland, Lake Hodges, Poway, Ramona, San Dieguito Reservoir

Land Use: Rural, urban development in Del Mar including race track/fairgrounds

Flood Damage: Roads, Del Mar Fairgrounds, bridges, several country clubs, residences, some businessess

F. Los Penasquitos Creek

Area: 166 square miles, including Rose and San Clemente Canyons

Tributaries: Sorrento Creek, Carroll Canyon, Poway Creek

Dams: Miramar

Land Use: Rural, urban development in Poway and Sorrento Valley

Flood Damage: Extensive flooding in Poway, Sorrento Valley

G. San Diego River

Area: 483 square miles

Tributaries: Boulder, San Vicente, Alvarado, Los Coches and Forester Creeks; Sycamore, Murphy Canyons

Dams: Cuyamaca, El Capitan, San Vicente, Murray, Padre

Land Use: Rural in uplands: extensive development

in Lakeside, Santee and Mission Valley areas

Flood Damage: Residences in Moreno Valley (San Vincent Creek), several bridges and low water crossings, Mission Valley businesses

H. Sweetwater River

Area: 242 square miles, including Chollas, Toyon Creeks

Tributaries: Peterson, Harbison, Spring Valley and Paradise Creeks

Dams: Loveland, Sweetwater

Land Use: Rural in uplands; extensive development in lower reaches; crops

Flood Damage: Extensive residential/commercial development in Chula Vista, National City, and Bonita; roads, utilities, golf courses; industrial and marine docks

I. Otay River

Area: 124 square miles

Tributaries: Jamul, Dulzura and Poggi Canyon Creeks

Dams: Otay (lower and upper)

Land Use: Rural, crops, urban development

Flood Damage: Roads, crops, utilities, salt ponds at San Diego Bay

J. Tijuana River

Area: 465 square miles in the United States, approximately 1,860 square miles in Mexico

Tributaries: Pine Valley, Cottonwood, Campo and La Posta Creeks

Dams: Morena, Barrett, Rodriguez, El Carrizo Land Use: Rural, crops, extensive development in Tijuana, urban development in Imperial Beach

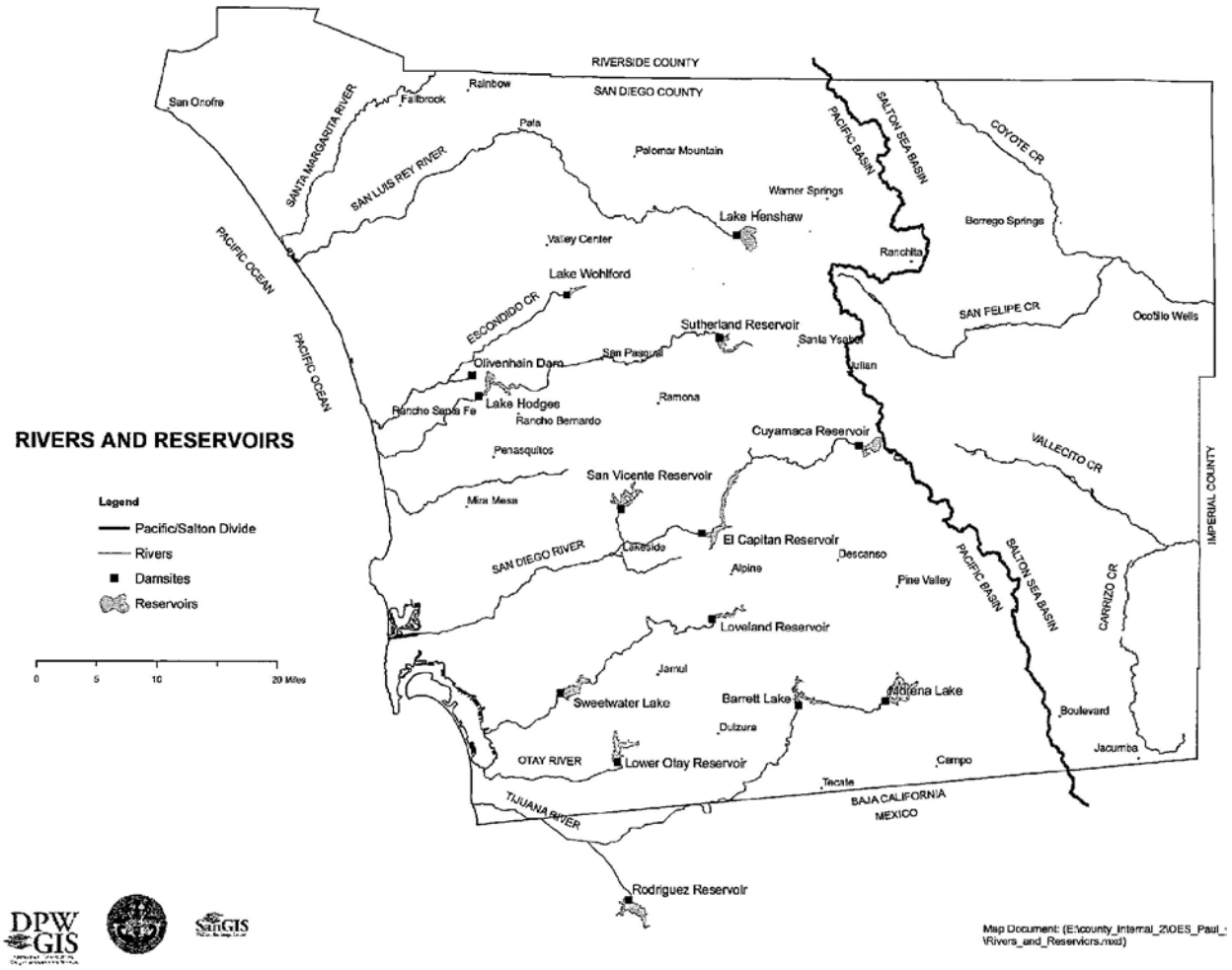
Flood Damage: Roads, crops, utilities, lagoon area, and extensive commercial and residential development in Mexico

Emergency Response

The Office of Emergency Services plays a vital role in weather-related emergencies. It serves as the coordinating link between the National Weather Service and emergency response agencies. All weather watches and warnings are called in to OES by the National Weather Service. The extent of response and notification is dependent upon the nature and circumstances of the weather alert or forecast.

In the event flooding should occur, the County Department of Public Works, Hydrology Division of the Flood Control Section, maintains the ALERT Flood Warning System. During the winter season, OES receives daily information on the status of reservoirs, rivers, and stream levels from Hydrology. Level data is also available from the River Forecast Center in Sacramento. In combination with the 100-year flood plain maps and streamflow models, it is possible to "anticipate" the areas of concern well in advance of an actual occurrence. Procedures and flood and weather related definitions are contained in the Flood and Weather Alerts SOP.

Figure 3



IV. Imminent/Actual Dam Failure

For centuries, dams have provided mankind with essential benefits such as water supply, flood control, recreation, hydropower, and irrigation. They are an integral part of society's infrastructure. In today's technical world, dam failures are rated as one of the major "low probability, high loss" events. The large number of dams 30 or more years old is a matter of great concern. Many of the older dams are characterized by increased hazard potential due to downstream development and increased risk due to structural deterioration in inadequate spillway capacity.

Although various types of dams have been built to control the flow of rivers since the early days of civilization, today there are three principal types of dams in use around the world, earth, rock, and concrete. The type of dam chosen for a particular river depends on the geology, topography and climate of the region.

Types of Dams

Earth and Rock-fill Dams

Approximately 60% of all dams built in the United States are earth dams. With broad bases that distribute weight over a wide area, they are the only dams that can be built on a soft, unstable riverbed. Where rock is plentiful, rockfill dams are equally effective, but their heavier weight requires a solid foundation. Historically, 38% of the earth-rockfill dam failures have resulted from piping and seepage, with 35% of the failures blamed on overtopping. Sand, gravel and other loose materials in joints and cracks are vulnerable to the phenomenon known as piping, which occurs when the pressure of water from seepage simply washes the soil particles away, leaving conduits that enlarge themselves and gradually undermine the dam. Similarly, a dam may collapse because of the large cavities that are left when sedimentary rocks, such as limestone, are dissolved by percolating water. Overtopping is particularly dangerous for earth dams since the strength of the dam is at its base. The principal cause of overtopping is inadequate spillway capacity, which results in a concentration of water flow over the center of the dam. Seventy-four percent of all dam failures have involved earth-rockfill dams.

Concrete Gravity Dams

Nearly 30% of the dams in the United States are concrete gravity dams. A gravity dam is made of giant concrete blocks or stones sealed with grout or liquid cement. These dams use their great bulk and weight to resist water pressure. Nearly 60% of gravity dam failures are attributed to defective foundations. Ten percent of all dam failures have involved concrete gravity dams.

Concrete Arch or Hydraulic Fill Dams

About 10% of the dams in the United States are this type. The arch dam has a face that curves upstream from bank to bank. The comprehensive strength of the arch transmits water pressure to the side abutments and foundation, bonding the dam to the canyon.

Five percent of all dam failures have involved concrete arch dams, with the majority of the failure resulting from defective foundations. During a flood, a small break in an arch dam can swiftly lead to total failure.

History

In the early 1900s, homes and ranch buildings were built on high ground overlooking valley floors. But, as population increased, valley floors were used for agricultural purposes and people settled close to their cultivated fields for convenience, thus encroaching on the flood plains. This was the situation in January 1916. Two separate storms in the month of January caused two separate floods. The first storm had been preceded by three or four days of light rain and the reservoirs were already approaching capacity. Both storms fell on a saturated watershed which rapidly carried the flow to the rivers. When the storm hit, the streams were converted from normally dry creek beds to torrents that soon overran their banks, causing widespread damage from the Santa Margarita River to the Mexican border and from the mountain divide to the Pacific Ocean.

The flood damage from the second storm was even greater than from the first. Sweetwater Dam was topped at 2:20 a.m. on January 27, and by 4:30 a.m. the flow over the dam was 3.5 feet deep. At that time, 50 feet of an earth-fill dike north of the dam was topped and the dike washed away. The water then broke the concrete-core wall and cut a bypass around the dam through the bedrock foundation. The flood flow then inundated the valley from the dam to San Diego Bay.

On the same day, water in the Lower Otay Reservoir rose rapidly and the outlet gate was ordered open. However, the inflow into the reservoir was greater than the outlet gate was capable of discharging, so men were dispatched to warn the valley inhabitants that the dam would fail during the night. At 4:45 p.m. water reached the top of the dam and by 4:50 p.m. was running down its downstream face. At 5:05 p.m. the tension was so great that the steel diaphragm tore from the top at the center, and the dam opened outward "like a pair of gates". The dam destruction was very rapid, with the reservoir emptying itself of 13 billion gallons of water in approximately 2.5 hours. During this time a huge wave, estimated at between 6 and 20 feet in height, rushed 10 miles down the Otay Valley and out to sea in a matter of 48 minutes. Areas of the valley, which had been heavily wooded with brush, were stripped to bedrock by the force of the water and damage throughout the valley was extremely high.

Large Dams

Approximately 40 dams have been built in the San Diego Operational Area for the purpose of water conservation. These facilities are designed and operated for water conservation and storage, and are not expected to eliminate the major part of the flood hazard on any of the streams or rivers of the Operational Area. The local water storage capacity of these reservoirs is 723,000 acre/feet. With only 30,000 acre/feet being captured from local runoff it is easy to see that the San Diego Operational Area is very dependent upon imported water and the ability of local reservoirs to store it. Figure 3 shows the general locations of the San Diego Operational Area's rivers and dams.

It is important to know what type of dam you are dealing with when preparing emergency dam plans. A percentage comparison of the San Diego Operational Area's dams reveals the following: 45% Hydraulic, 30% Earth-rockfill, and 25% Gravity. Table 1 is a listing of the major dams, dam type, year completed, and maximum capacities.

Dam Failure

Dam failures cause loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside the immediate hazard areas. A catastrophic dam failure, depending on size of the dam and the population downstream, could easily exceed the response capability of the local community. Damage control and disaster relief support would be required from other local governments and private organizations, and from the state and federal governments. Mass evacuation of the inundation areas would be essential to save lives. Extensive search and rescue operations could be required to assist trapped or injured persons. Emergency medical care, food, and temporary shelter would be required for injured or displaced persons. Identification and burial of many dead persons would pose difficult problems and public health would be a major concern. These and other emergency operations could be seriously hampered by the possible loss of communications, damage to transportation routes, and the disruption of public utilities and other essential services.

The Office of Emergency Services maintains the Dam Evacuation Plans for the entire Operational Area. The plans contain information about the physical situation, affected jurisdictions, evacuation routes, unique institutions and event responses. Each plan also contains: a master phone list; inundation maps showing direction of flow and inundation area boundaries; hospitals; multipurpose staging areas; command posts/sites; and mass care and shelter facilities/sites.

TABLE 1
LARGE DAMS IN SAN DIEGO COUNTY

RESERVOIR	DAM TYPE	YEAR COMPLETED	MAXIMUM CAPACITY (acre/feet)
Barrett*	Gravity	1922	37,947
Chet Harritt (Lake Jennings)	Earth	1962	9,790
Cuyamaca	Earth	1887	8,195
Dixon	Earth-rock	1970	2,606
El Capitan	Hydraulic	1934	112,800
El Carrizo	Earthfill	1978	31,990
Henshaw*	Hydraulic	1923	51,774
Lake Hodges*	Multiple arch	1918	33,550
Lake Loveland	Arch	1945	25,400
Lower Otay*	Gravity	1919	49,510
Miramar*	Earth	1960	7,184
Morena*	Earth-rock	1912	50,206
Murray*	Multiple arch	1918	4,818
Olivenhain	Roller-compacted concrete	2003	24,364
Poway	Earth	1971	3,330
Rodriguez*	Multiple arch	1936	111,000
Ramona	Earth	1988	12,000
San Dieguito	Multiple arch	1918	883
San Vicente*	Gravity	1943	89,312
Sutherland*	Multiple arch	1954	29,684
Sweetwater	Gravity	1888	30,079
Wohlford	Hydraulic	1924	6,506

NOTE: Rodriguez and El Carrizo Dams are located in Tijuana, Mexico, controlling portions of the flow of the Tijuana River which traverses through Otay, San Ysidro, and Imperial Beach on its way to the Pacific Ocean. Barrett Dam and Morena Dam control the flow of middle/upper Cottonwood Creek. The flow of Campo Creek and lower Cottonwood Creek to the Tijuana River is uncontrolled.

*These reservoirs and others are equipped with reservoir level gauges as part of the ALERT Flood Warning System.

Fire

San Diego County's topography, consisting of a semi-arid coastal plain and rolling highlands, when fueled by shrub overgrowth, occasional Santa Ana winds and high temperatures, creates an ever present threat of wildland fire. Extreme weather conditions such as high temperature, low humidity, and/or winds of extraordinary force may cause an ordinary fire to expand into one of massive proportions. The nature of the construction and ever increasing proximity of structures to watershed cover is conducive to fast-moving fires. Major earthquakes can cause uncontrolled fires, break water mains, sever major communications, and damage utilities. Private, commercial, and military air traffic is constantly increasing, presenting the problem of falling aircraft or emergency landings, which often result in major fires.

The 2007 San Diego County Firestorms were the largest in county history, far surpassing the 2003 Firestorms in terms of intensity and duration. At the height of the firestorms, there were seven separate fires burning in San Diego County, including the Witch Creek, Rice Canyon and Poomacha Fires. The seven fires resulted in 10 civilian deaths, 23 civilian injuries and 89 firefighter injuries – more than 62,000 fire personnel fought to control the wildland fires. The fires consumed approximately 369,000 acres or about 13% of the county's total land mass. Additionally, the fires destroyed an estimated 1,600 homes; 800 outbuidings; 253 structures; 239 vehicles; and 2 commercial properties.

San Diego County's ability to response effectively and minimize life and property damage was a direct result of the extensive planning, equipment procurement, training and exercises in the years since 2003.

Landslide

Landslides are characterized by the downslope movement of rock, soil, or other debris. Frequently they accompany other natural hazards such as floods, earthquakes, and volcanic eruptions. Although landslides sometimes occur during earthquake activity, rarely are earthquakes their primary cause. Rather, earthquake shocks function as a trigger mechanism in releasing earth materials which already have been prepared for rapid downslope movement by other processes.

Increased housing development on marginal lands and in coastal areas, which are desirable but generally unstable, has increased the threat from landslides throughout the San Diego Operational Area.

Slope Oversteepening

The most common cause of an increase in the downslope gravitational stress applied to slope materials is slope oversteepening, which may be produced either by natural processes or by man's activities. Undercutting of a valley wall by stream erosion, or of a sea cliff by wave erosion are ways in which slopes may be naturally oversteeped.

Slope Wash

Another type of soil failure is slope wash, the erosion of slopes by surface-water runoff. The

intensity of slope wash is dependent on the discharge and velocity of surface runoff and on the resistance of surface materials to erosion. Surface runoff also is greatly increased in urban and suburban areas due to the presence of surfaces such as roads, parking lots, and buildings, which have zero infiltration capacities.

Mudflows

Mudflows are defined as flows or rivers of liquid mud down a hillside. They occur when water accumulates under the ground, usually following long and heavy rainfalls. If there is no brush, tree, or ground cover to hold the soil, mud will form and flow down the slope.

VII. Tsunami/Coastal Storm

Tsunami

A tsunami, commonly but inaccurately called a tidal wave, is a series of long-period sea waves produced by a submarine earthquake or volcanic eruption. The waves may travel unnoticed across the ocean for thousands of miles from their point of origin building up to great heights over typically shallow water. Tsunamis are called seismic sea-waves because they originate in some sudden rapid movement of the earth's crust. (Most commonly this would consist of seismic or volcanic disturbances of the ocean floor to include an underwater landslide or avalanche, or long period earthquake waves that set the adjacent water in motion.)

To date, tsunami damage in San Diego has been limited to its harbors. A catastrophic earthquake in Chile during 1960 resulted from a major marine underwater fault. That faulting generated a tsunami which caused loss of property and life across the Pacific. Los Angeles and San Diego harbors experienced $1 million in damage to piers and small boats.

The February 27, 2010, 8.8 magnitude earthquake that occurred off the coast of Chile was the strongest earthquake affecting Chile since the magnitude 9.5, 1960 earthquake (the most energetic earthquake ever measured in the world), and it is the strongest earthquake worldwide since the 2004 Indian Ocean earthquake. The temblor generated tsunamis that impacted many coastal towns in Chile, killing over 475 people. As far as the tsunami effects in southern California, there were very strong currents, (up to 15 knots in several southern California harbors) with the strongest of these being at harbor entrances within narrow channels. There was over $1 million in damage, statewide, including damage to docks, boats and harbor infrastructure. A portion of the dock at the Bali Hai restaurant in Shelter Island was destroyed.

Coastal Storms

Southern California's high population density and large local economy make it especially susceptible to coastal storms. Individual storm events not only can cost millions to billions of dollars, they can also result in environmental damage and loss of human life. Storm periods in January and February have historically been characterized by successive waves of rain-bearing clouds driven from the Central Pacific by jet stream patterns lying more southerly than usual. Storms in San Diego County have been more severe at various times, such as the county-wide El Nino Flood event in 1998, due to the random distribution of rain clouds and greater effects in the higher mountains.

The Coastal Storms Program (CSP) is a nationwide effort led by the National Oceanic and Atmospheric Administration (NOAA) to reduce loss of life and negative impacts on coastal property and the environment caused by coastal storms. NOAA, in coordination with its regional partners through the Coastal Storm Program hope to reduce the damages coastal storms will inflict on the region by developing new weather observation tools, flood and pollutant transportation models, and a host of other models and services.

VIII. Drought

With close to a 90 percent dependence on imported water, the San Diego Operational Area is faced with the ever-present threat of drought or water shortage. If San Diego had to rely exclusively on locally produced water, a population of only about 300,000 could be sustained. The current population is over 3 million people.

The Water Authority has an aggressive public information campaign, which emphasizes the necessity of meeting the conservation goals. Water Authority conservation and public information programs targeted all categories of water user, from individual households to large business and agricultural irrigators.

In addition, the Water Authority's Emergency Storage Project (ESP) was designed to provide an additional 90,000 acre-feet of emergency storage and the necessary facilities to deliver water throughout the county during potential disruptions in imported water service due to prolonged drought, earthquake, or other disaster. For more information please reference **Appendix W: Water Operations** which may be found in Annex J.

IX. San Onofre Nuclear Generating Station

Location and Description

The San Onofre Nuclear Generating Station (SONGS) site is located on the coast of Southern California in San Diego County, approximately 50-60 miles equidistant from the cities of Los Angeles and San Diego. The 83.63 acre site is entirely contained within the 125,000 acre Camp Pendleton Marine Corps Base military reservation.

Interstate Highway 5 and the Santa Fe Railroad both pass within 1,000 feet of the plant site and run alongside the coast. In the Oceanside area, Highways 76 and 78 run inland and cross I-15 which travels in a north-south direction, about 25 miles east of the plant site.

San Onofre is a pressurized water reactor type generating station using lightly enriched uranium dioxide (UO_2) as fuel. A full fuel load is approximately 72 tons of UO_2 in pellet form. Highly radioactive by-products would be the main offsite hazard in a nuclear generating station incident.

It is assumed that whenever a nuclear generating station is, or has been generating power, a nuclear incident is possible. The principal deterrent to an incident is prevention, through correct

design, construction, and operation, to assure that the integrity of the reactor system is maintained. Protective systems are automatically activated to counteract the effects of any part of the reactor system failing.

Topography

The topography of the local area is typical of the region. A rather narrow, gently sloping coastal plain, extending seaward from the uplands, is terminated abruptly at the shoreline by high seacliffs straightened over long distances by marine erosion. Seacliffs in the immediate vicinity of the plant site reach a height of 60 to 80 feet above sea level and are separated from the ocean by a narrow band of beach sand. In some places, ephemeral (intermittent) streams are actively eroding gullies into the uncemented materials underlying the seaward portions of the coastal plain. Several deeply-incised barrancas have been formed.

There is no apparent ground water storage in the vicinity of the plant site, except at the lower reach of San Onofre Creek, about 1.5 miles to the northwest. Several water wells which were used for domestic purposes are located within a few miles of the site. However, the water wells in the San Onofre Basin have been abandoned by the Marine Corps because of potential seawater encroachment caused by overpumping.

The major part of the shoreline in the vicinity of the plant site is used for military purposes. San Onofre State Beach is the nearest recreation beach.

Demography and Land Use

About half of the sites within a 50-mile radius of the plant site fall on land, the balance being in the Pacific Ocean. The land area includes the northwestern corner of San Diego County.

The nearest sizeable community is San Clemente, with an estimated (2009) population of 61,610. The next nearest population center is the coastal city of Oceanside, located about 17 miles to the southeast. The City of San Diego is located about 51 miles southeast of the SONGS site.

In addition to the resident population, there is a seasonal influx of vacation and weekend visitors, especially during the summer months. Most of the coastline between Long Beach and San Diego is beach with public access. The population density at the coast is thus significantly higher on weekends compared to the weekly resident population and accessible beach recreation produces daytime peaks in population.

Threat

It is assumed that whenever a nuclear generating station is or has been generating nuclear power a nuclear accident is possible. The principal deterrent to an incident is prevention, through correct design, construction, and operation, to assure that the integrity of the reactor system is maintained. Protective systems are automatically activated to counteract the effects of any part of the reactor system failing. In an accident, physical barriers may be damaged and/or control of the radioactive material may be lost or reduced.

Such a release would most likely be to the atmosphere, although surface discharge of radioactive liquid is possible. The liquid may be expected to run into the ocean or be absorbed into the ground. An atmospheric release (called "plume") would be dispersed by prevailing winds. The passage of this plume can result in direct radiation exposure to those persons in its path, and in some cases may result in the contamination of environmental surfaces by fallout (a deposit of particulate matter which is radioactive). Such contamination may enter the food chain by involvement with pastureland, livestock, water supplies or agricultural products, and would result in additional exposure to those persons within the area.

Further information can be found in the San Diego Operational Area Nuclear Power Plant Emergency Response Plan.

X. Nuclear Powered Vessels

Nuclear powered vessels have been home-ported in San Diego Bay since 1958. During that time, the Naval Nuclear Propulsion Program (NNPP) has maintained the same rigorous attitude toward the control of radioactivity and protection of the environment as it has toward reactor design, testing, operation and servicing. As a result, the NNPP has a well-documented record that demonstrates the absence of environmental effect from the operation of U.S. naval nuclear-powered vessels.

Environmental releases, both airborne and waterborne, are strictly controlled. Through the entire history of the NNPP there has never been a reactor accident, nor any release of radioactivity that has had an adverse effect on human health or the quality of the environment. The Program's standards and record surpass those of any other national or international nuclear program.

NNPP facilities and vessels have plans in place to deal with an incident involving a nuclear power plant aboard a Naval vessel. Local government authorities would be promptly notified and then kept fully informed of the situation if there were a potential threat to the civilian population in the surrounding communities. Because of differences in design and operation between naval nuclear propulsion plants and commercial nuclear power plants, in the unlikely event of release of radioactivity from a vessel, the exposure to the public would be localized and not severe. Due to the unique design and operation of U.S. naval nuclear powered vessels, existing all-hazards emergency response procedures established for earthquakes, fires or hazardous materials emergency situations are sufficient to respond to a radiological emergency involving a NNPP facility or vessel.

The Cities of San Diego and Coronado have developed notification protocols with the Navy for the highly unlikely event that a radiological accident occurs at NNPP facilities and/or vessels in San Diego. These notification protocols are consistent with the Unified San Diego County Operational Area Emergency Plan.

Information on the County Operational Area response can be found in Annex H, "**RADIOLOGICAL PROTECTION, RADIOLOGICAL EMERGENCY ONBOARD A NAVAL NUCLEAR PROPULSION PROGRAM FACILITY OR VESSEL IN SAN DIEGO**".

XI. Terrorism

While terrorism has always been a potential problem, when the World Trade Center was attacked on September 11, 2001 it became a reality. Since then, public awareness has been heightened and a great deal of time, effort and money has been spent on planning, training and equipment in preparation for a terrorist event.

With the military bases, bio-medical firms and high tech research facilities spread throughout San Diego County, the San Diego Operational Area could become a target for future terrorist attacks. There are three primary concerns that are also addressed in Annex P: Terrorism.

Bombs
Either Conventional or Nuclear- an individual or a group could put together a small bomb, a small nuclear weapon or a conventional bomb with spent uranium or other radioactive material to make a “dirty bomb”. This could obviously affect a relatively large number of people and depending on the type of bomb, could have some very long lasting effects, and widespread damage.

Biological
The use of bacteria and/or viruses introduced into the air, food and/or water supply to make a large number of people ill and create panic. This is not as easy to accomplish as might be thought, at least in terms of the air or water supply. Bacteria and viruses need to be kept virulent in order to be effective, and in order to affect a large number of people at once, a large amount of it would have to be released. It is quite probable that anything that could be used effectively would be difficult to control and would probably do a great deal of damage to the people using it.

Chemical
The use of chemical agents to produce death or illness. These agents could be things like sarin, a type of nerve gas which was used in the 1995 subway attack in Japan, mustard gas, chlorine gas, pesticides or other less exotic but just as lethal chemicals.

Terrorism is not confined to foreign countries anymore, and while many of the incidents that have occurred throughout the world have been attributed to specific, known terrorist groups, there is no reason that an act of terrorism can’t be accomplished by an individual acting on his/her own.

Attachment B

CONTINUITY OF GOVERNMENT

Introduction

A major disaster or a nuclear attack could result in great loss of life and property, including the death or injury of key government officials, the partial or complete destruction of established seats of government, and the destruction of public and private records essential to continued operations of government and industry.

In the aftermath of a nuclear attack, during the reconstruction period, law and order must be preserved and, so far as possible, government services must be maintained. This can best be done by civil government. To this end, it is particularly essential that the local units of government continue to function.

Applicable portions of the California Government Code and the State Constitution (listed in Paragraph 6) provide authority for the continuity and preservation of State and local government.

Responsibilities

Government at all levels is responsible for providing continuity of effective leadership and authority, direction of emergency operations, and management of recovery.

Preservation of Local Governments

Succession of Local Officials
Sections 8635 through 8643 of the Government Code:

A. Furnish a means by which the continued functioning of political subdivisions can be assured by providing for the preservation and continuation of (city and county) government in the event of an enemy attack, or in the event a State of Emergency or Local Emergency is a matter of statewide concern.

B. Authorize political subdivisions to provide for the succession of officers (department heads) having duties related to law and order and/or health and safety.

C. Authorize governing bodies to designate and appoint three standby officers for each member of the governing body and for the Chief Executive, if not a member of the governing body. Standby officers may be residents or officers of a political subdivision other than that to which they are appointed. Standby officers take the same oath as regular officers and are designated Nos. 1, 2, and 3 as the case may be.

D. Authorize standby officers to report ready for duty in the event of a State of War Emergency, State of Emergency, or Local Emergency at the place previously designated.

E. Authorize local governing bodies to convene as soon as possible whenever a State of War Emergency, State of Emergency, or Local Emergency exists, and at a place not within the political subdivision. Authorize that, should all members, including all standbys, be unavailable, temporary officers shall be appointed as follows:

- By the Chairman of the Board of the county in which the political subdivision is located, or
- By the Chairman of the Board of any other county within 150 miles (nearest and most populated down to farthest and least populated), or
- By the Mayor, City Manager or their designee of any city within 150 miles (nearest and most populated down to farthest and least populated).

Temporary County Seats

Section 23600 of the Government Code provides that:

A. Board of Supervisors shall designate alternative temporary county seats which may be outside the county boundaries.

B. They cannot purchase real property for this purpose.

C. Their resolution is to be filed with the Secretary of State.

D. Different sites can be designated subsequently if circumstances require.

Suspensions and Appointments

Section 8621 of the Government Code:

Specifies that during a State of War Emergency, in the event that any officer of a political subdivision or employee of a state agency refuses or willfully neglects to obey an order or emergency regulation, the Governor may suspend that person and designate a replacement.

Preservation of State Government

A. Continuity of State Government

In the event of war or enemy-caused disaster, under the authority of Article IV, Section 21 of the State Constitution, the Legislature may provide for:

1. Filling the membership of either house should at least one-fifth be killed, missing or disabled.
2. Filling the Office of the Governor should the Governor be killed, missing or disabled.
3. Selecting a temporary seat of state or county government.

B. Succession to the Office of Governor

Article V, Section 10 of the State Constitution stipulates that:

1. The Lt. Governor shall become Governor under specified conditions.
2. The Legislature shall provide an order of precedence after the Lt. Governor.

Section 12058 of the Government Code provides that:

1. Following the Governor and the Lt. Governor, the line of succession is President Pro Tempore of the Senate, Speaker of the Assembly, Secretary of State, Attorney General, Treasurer, and Controller.
2. Or, if none of the above is available as a result of a war or enemy-caused disaster, then such other person as provided by law.

Section 12060 of the Government Code provides that:

1. The Governor shall appoint and designate by filing with the Secretary of State, the names of at least four and not more than seven citizens who will succeed in the order specified to the Office of the Governor.
2. Consideration be given to appointments from various parts of the state so there will be the greatest probability of survival.
3. The persons appointed be confirmed by the Senate.
4. The appointed person take the oath of office and is thereupon designated as a Disaster Acting Governor.
5. In the event that the Office of Governor is not filled within 24 hours after the enemy-caused disaster, one of the Disaster Acting Governors in the order specified shall fill the office.

Each Disaster Acting Governor shall, while filling the office, have the powers and perform all the duties of the office.

C. Succession to Constitutional Offices

Section 12700 of the Government Code provides that:

The Lt. Governor, Attorney General, Secretary of State, Treasurer, and Controller shall appoint and designate at least three and not more than seven alternates who will serve as acting officer in a manner like that provided for the Governor.

D. Temporary Seat of State Government

Section 450 of the Government Code provides that:

1. The Governor shall designate an alternative temporary seat of government for use in the event of war or enemy-caused disaster or the imminence thereof.

2. A different location may subsequently be designated as circumstances require.

3. The Director of the Department of General Services shall arrange for the use of the designated facilities.

E. Sessions of the Legislature

Section 9035 of the Government Code provides that:

1. The Legislature will convene in a war or enemy-caused disaster at Sacramento or in the designated temporary seat of state government.

2. In such special session, the Legislature may fill any vacancies in its membership and may consider and act on any subject of legislation designed to relieve or alleviate the consequences of the disaster or to restore or continue state and local government activities and operations.

Preservation of Essential Records

Each level of government should protect its essential records. The determination of the records to be preserved rests with each agency service chief or with the custodian of the records.

Record depositories should be located well away from potential danger zones and housed in facilities designed to withstand blast, fire, water, and other destructive forces. Such action will ensure that:

1. The rights and interests of individuals, corporations, other entities, and governments are preserved.
2. Records will be available during emergency operations and later, for reestablishing normal governmental activities.

Three types of records considered essential are those required to:

1. Protect the rights and interests of individuals. These include vital statistics, land and tax records, license registers, and articles of incorporation.
2. Conduct emergency operations. These would include utility systems maps, locations of emergency supplies and equipment, emergency operations plans and procedures, lines of succession, and lists of regular and auxiliary personnel.
3. Reestablish normal governmental functions and protect the rights and interests of government. Constitutions and charters, statutes and ordinances, court records, official proceedings, and financial records would be included here.

References

Continuity of Government in California (Article IV, Section 21 of the State Constitution).

Preservation of Local Government (Article 15 of the California Emergency Services Act).

Temporary Seat of State Government (Section 450, Title 1, Division 3, Chapter 1 of the Government Code).

Temporary County Seats (Section 23600, Title 3, Division 1, Chapter 4, Article 1 of the Government Code).

Member of the Legislature (Section 9004, Title 2, Division 2, Part 1, Chapter 1.5, Article 1 of the Government Code).

Legislative Session after War or Enemy-Caused Disaster (Sections 9035_9038, Title 2, Division 2, Part 1, Chapter 1.5, Article 2.5 of the Government Code).

Succession to the Office of Governor (Article V, Section 10 of the State Constitution).

Succession to the Office of Governor (Sections 12058_12063, Title 2, Division 3, Part 2, Chapter 1, Articles 5.5 and 6 of the Government Code).

Succession to Constitutional Offices (Sections 12700_12704, Title 2, Division 3, Part 2, Chapter 7 of the Government Code).

Preservation of State Records (Sections 14745_14750, Title 2, Division 3, Part 5.5, Chapter 5, Articles 2 and 3 of the Government Code).

Attachment C
MUTUAL AID

Introduction

The foundation of California's emergency planning and response is a statewide Standardized Emergency Management System (SEMS) mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation(s). The basis for the system is Senate Bill 1841 (Petris, 1993) and the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided for in the California Emergency Services Act. The Civil Defense Master Mutual Aid Agreement was developed in 1950 and adopted by California's incorporated cities and by all 58 counties. It created a formal structure within which each jurisdiction retains control of its own personnel and facilities, but can give and receive help whenever it is needed. State government, on the other hand, is obligated to provide available resources to assist local jurisdictions in emergencies.

To facilitate the coordination and flow of mutual aid, the state has been divided into six California Emergency Management Agency Mutual Aid Regions (see map - Figure 1 of Attachment D). Through this mutual aid system, Cal EMA can receive a constant flow of information from every geographic and organizational area of the state. This includes direct notification from a state agency or department or from a local government official that a disaster exists or is imminent. In some cases, it also includes information that makes it possible to anticipate an emergency and mitigate its effects by accelerated preparations, or perhaps prevent a situation from developing to disaster proportions.

To further facilitate the mutual aid process, particularly during day-to-day emergencies involving public safety agencies, Fire and Rescue, and Law Enforcement Coordinators have been selected and function at the Operational Area (countywide), Mutual Aid Region (two or more counties), and at the state level. It is expected that during a catastrophic event, such as an earthquake, Coordinators will be assigned at all levels for other essential services (e.g., Medical, Care and Shelter, Rescue).

Responsibilities

A. Local Jurisdictions

Local jurisdictions are responsible for:

- Developing and maintaining current Emergency Plans which are compatible with the California Master Mutual Aid Agreement, and are designed to apply local resources in meeting the emergency requirements of the immediate community or its neighbors, and coordinate such plans with those of neighboring jurisdictions to ensure mutual compatibility.
- Maintaining liaison with the appropriate Cal EMA Mutual Aid Region Office and neighboring jurisdictions.
- Identifying Multipurpose Staging Areas (MSA) to provide rally points for incoming mutual aid and/or a staging area for support and recovery activities.
- Responding to requests for mutual aid.
- Dispatching situation reports to the appropriate Operational Area Coordinator and/or Cal EMA Mutual Aid Region as the emergency situation develops and as changes in the emergency situation dictate.
- Requesting assistance from neighboring jurisdictions, and/or the Operational Area, as necessary and feasible.
- Receiving and employing resources as may be provided by neighboring jurisdictions and state, federal, and private agencies.
- Carrying out emergency regulations issued by the Governor.

B. Operational Area

Coordinators at the Operational Area level are responsible for:

- Coordinating intra-county mutual aid.
- Maintaining liaison with the appropriate Cal EMA Mutual Aid Region Coordinator, the local jurisdictions within the county, and neighboring jurisdictions.
- Identifying Multipurpose Staging Areas (MSA) to provide rally points for incoming mutual aid and/or staging areas for support and recovery activities.
- Channeling local mutual aid requests which cannot be satisfied from within the county to the appropriate Cal EMA Mutual Aid Region Coordinator.
- Dispatching reports to the appropriate OES Mutual Aid Region Coordinator as the emergency situation develops and as changes in the emergency situation dictate.

- Receiving and employing resources provided by other counties, and state, federal, and private agencies.
- Carrying out emergency regulations issued by the Governor.

C. Cal EMA Mutual Aid Region

Coordinators at the Cal EMA Mutual Aid Region level are responsible for:

- Coordinating inter-county mutual aid.
- Maintaining liaison with appropriate state, federal, and local emergency response agencies located within the Region.
- Providing planning guidance and assistance to local jurisdictions.
- Responding to mutual aid requests submitted by jurisdictions and/or Operational Area Coordinators.
- Receiving, evaluating, and disseminating information on emergency operations.
- Providing the State Director, OES, with situation reports and, as appropriate, recommending courses of action.

D. State

California Emergency Management Agency

- Performs executive functions assigned by the Governor.
- Coordinates the extraordinary emergency activities of all state agencies.
- Receives, evaluates, and disseminates information on emergency operations.
- Prepares emergency proclamations and orders for the Governor and disseminates to all concerned.
- Receives, processes, evaluates, and acts on requests for mutual aid.
- Coordinates the application of state mutual aid resources and services.
- Receives, processes, and transmits requests for federal assistance.
- Directs the receipt, allocation, and integration of resources supplied by federal agencies and/or other states.
- Maintains liaison with appropriate state, federal, and private agencies.
- Coordinates emergency operations with bordering states.

Other State Agencies

Provides mutual aid assistance to local jurisdictions commensurate with capabilities and available resources.

Policies and Procedures

- Mutual aid resources will be provided and utilized in accordance with the California Master Mutual Aid Agreement and supporting separate agreements.
- During a proclaimed emergency, interjurisdictional mutual aid will be coordinated at the appropriate Operational Area or Mutual Aid Regional level whenever the available resources are:

- Subject to state or federal control.
- Subject to military control.
- Located outside the requesting jurisdiction.
- Allocated on a priority basis.

- Due to the incompatibility of radio communications equipment between most agencies, local agencies should, where possible, provide incoming mutual aid forces with portable radios using local frequencies.
- Requests for and coordination of mutual aid support will normally be accomplished through established channels (cities to Operational Areas, to Mutual Aid Regions, to State). Requests should include, as applicable:

- Number of personnel needed.
- Type and amount of equipment.
- Reporting time and location.
- Authority to whom they are to report.
- Access routes.
- Estimated duration of operations.

References

Mutual aid assistance may be provided under one or more of the following authorities:

- California Fire and Rescue Emergency Plan.
- California Law Enforcement Mutual Aid Plan.
- Local Mutual Aid Agreement.
- Federal Disaster Relief Act of 1974. (Public Law 93_288) (Provides federal support to state and local disaster activities.)

Figure 1

Cal EMA
CALIFORNIA EMERGENCY MANAGEMENT AGENCY
Mutual Aid and Administrative Regions
Inland Region
Coastal Region
Southern Region
I
II
III
IV
V
VI

Attachment E

STATE AGENCY EMERGENCY RESPONSE ROLES

L=Lead S=Support	Aging	Air Resources Board	State Architect	Conservation/ Mines and Geology	CA Conservation Corps	Corrections	Education	EMSA	Employment Development	Energy Commission	Finance	Fish & Game	Food & Agriculture	Forestry & Fire Protection
MANAGEMENT														
Emergency Management														
Liaison														S
Safety														
Public Information														
PLANNING/INTELLIGENCE														
Mobilization/Demobilization														S
Plans														
Reports														
Situation Status														S
Technical Specialist		S	S	S										
OPERATIONS														
Care and Shelter	S				S		S	S					S	
Construction & Engineering					S									
Coroners														
Fire						S								S
Hazmat (includes radiological)		S						S				L*	S	S
Law Enforcement						S						S		
Medical					S	S		L					S	
Public Health						S		S					S	
Utilities										S				S
LOGISTICS														
Communications/ Info. Systems														S
Facilities					S	S								S
Personnel									S					
Purchasing														S
Resources														S
Transportation														
FINANCE/ADMINISTRATION														
Finance/Administration											S			

*Lead when there is an oil spill incident on a waterway involving OSPR, otherwise acts as Support.

Attachment E Continued

STATE AGENCY EMERGENCY RESPONSE ROLES

L=Lead S=Support	General Services	Health Services	Highway Patrol	Housing/Comm. Develop	Industrial Relations	Integ.Waste Manage Bd.	Justice	Mental Health	Military Dept. (CNG)	Motor Vehicles	Off. Crim. Just. Planning	OES	OEHHA	State Health Plan. & Dev.	Parks and Recreation
MANAGEMENT															
Emergency Management												L			
Liaison								S	S			L			
Safety												L			
Public Information												L			
PLANNING/INTELLIGENCE															
Mobilization/Demobilization									S			L			
Plans												L			
Reports												L			
Situation Status		S	S						S			L			
Technical Specialist												L			
OPERATIONS															
Care and Shelter		S		S				S	S	S					S
Construction & Engineering	S		S		S				S			L			S
Coroners												L			
Fire									S			L			
Hazmat (includes radiological)		S	S			S	S		S			L	S		S
Law Enforcement			S				S		S		S	L			S
Medical		S						S	S				S	S	
Public Health		L						S	S				S	S	
Utilities												L			
LOGISTICS															
Communications/Info. Systems	S	S							S			L			S
Facilities												L			
Personnel												L			
Purchasing	S											L			
Resources	S								S			L			
Transportation	S		S						S	S					
FINANCE/ADMINISTRATION															
Finance/Administration	S											L			

Attachment E Continued

STATE AGENCY EMERGENCY RESPONSE ROLES

L=Lead S=Support	Personnel Administration	Personnel Board	Public Utilities Comm.	Real Estate	Rehabilitation	Social Services	Toxic Substances Control	Transportation	Universities	Veterans Affairs	Water Resources	Water Resources Control Bd.	Youth Authority
MANAGEMENT													
Emergency Management													
Liaison													
Safety													
Public Information													
PLANNING/INTELLIGENCE													
Mobilization/Demobilization													
Plans													
Reports													
Situation Status						S		S					
Technical Specialist													
OPERATIONS													
Care and Shelter				S	S	L			S	S			S
Construction & Engineering								S			S		
Coroners							S						
Fire													S
Hazmat (includes radiological)							S	S				S	
Law Enforcement							S	S					S
Medical						S	S			S			S
Public Health						S	S			S			S
Utilities			S								S	S	
LOGISTICS													
Communications/Info. Systems													
Facilities													
Personnel	S	S											
Purchasing													
Resources													
Transportation			S					L					
FINANCE/ADMINISTRATION													
Finance/Administration													

Attachment F Federal Roles

Agency	Emergency Support Functions														
	#1 - Transportation	#2 - Communications	#3 - Public Works and Engineering	#4 - Firefighting	#5 - Emergency Management	#6 - Mass Care, Housing, and Human Services	#7 - Resource Support	#8 - Public Health and Medical Services	#9 - Urban Search and Rescue	#10 - Oil and Hazardous Materials Response	#11 - Agriculture and Natural Resources	#12 - Energy	#13 - Public Safety and Security	#14 - Long-term Community Recovery and Mitigation	#15 - External Affairs
USDA			S		S	S		S		S	C/P	S		P	S
USDA/FS	S	S	S	C/P	S	S	S	S	S	S			S		
DOC	S	S	S	S	S		S		S	S	S	S	S	P/S	S
DOD	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
DOD/USACE			C/P	S	S	S	S	S	S	S	S	S	S	S	
ED					S										S
DOE	S		S		S		S	S		S	S	C/P	S	S	S
HHS			S		S	S		C/P	S	S	S			P/S	S
DHS	S	S	S		S	S	S	S	S	S	S	S	C/P/S	S	C
DHS/EPR/FEMA		S	P	S	C/P	C/P			C/P	S		S		C/P	P
DHS/IAIP/NCS		C/P													
DHS/USCG	S		S	S				S	S	P			S		
HUD					S	S								P	S
DOI	S	S	S	S	S	S		S	S	S	P	S	S	S	S
DOJ	S		S	S	S	S		S	S	S	S		C/P/S		S
DOL			S		S	S	S	S	S	S	S	S		S	S

C = ESF coordinator
P = Primary agency
S = Support agency

Note: Unless a specific component of a department or agency is the ESF coordinator or a primary agency, it is not listed in this chart. Refer to the ESF Annexes for detailed support by each of these departments and agencies.

Attachment F Continued

Agency	Emergency Support Functions														
	#1 - Transportation	#2 - Communications	#3 - Public Works and Engineering	#4 - Firefighting	#5 - Emergency Management	#6 - Mass Care, Housing, and Human Services	#7 - Resource Support	#8 - Public Health and Medical Services	#9 - Urban Search and Rescue	#10 - Oil and Hazardous Materials Response	#11 - Agriculture and Natural Resources	#12 - Energy	#13 - Public Safety and Security	#14 - Long-term Community Recovery and Mitigation	#15 - External Affairs
DOS	S				S			S		S	S	S			S
DOT	C/P		S		S	S	S	S	S	S	S	S		S	S
TREAS					S	S			S					P	S
VA			S		S	S	S	S					S		S
EPA			S	S	S			S		C/P	S	S	S	S	S
FCC		S			S										S
GSA	S	S	S		S	S	C/P	S		S	S				S
NASA			S		S		S		S				S		S
NRC			S		S			S		S		S			S
OPM					S		S								S
SBA					S	S		S						P	S
SSA						S							S		S
TVA			S		S							S		S	S
USAID								S	S						S
USPS	S				S	S		S			S	S	S		S
ARC			S		S	P		S			S			S	S

C = ESF coordinator
P = Primary agency
S = Support agency

Note: Unless a specific component of a department or agency is the ESF coordinator or a primary agency, it is not listed in this chart. Refer to the ESF Annexes for detailed support by each of these departments and agencies.

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX A

Emergency Management

(Including EOC Operations)

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX A

Emergency Management (Including EOC Operations)

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ANNEX A
EMERGENCY MANAGEMENT

I. General

Purpose

1. To describe how emergencies will be managed within the San Diego County Operational Area.

2. To describe the organization and operation of Emergency Operations Centers (EOCs).

Objectives

1. To provide a basis for centralized control, coordination, and direction of emergency operations.

2. To describe the Emergency Operations Center functional responsibilities under the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).

Plan Activation and Termination

This Annex is automatically activated when two or more jurisdictional Emergency Operation Centers (EOCs) within San Diego County are activated or when one jurisdictional EOC requests that the OA EOC be activated. This Annex is terminated when the EOC is deactivated.

II. Emergency Operations

Overview

Emergency Management within the San Diego Operational Area consists of the synchronization of a myriad of governmental, non-profit, and business organizations into a single focused response, with the ultimate goal of saving lives, property, protecting the environment and minimizing social loss from the disaster or emergency.

The effectiveness of the emergency response is largely predicated on the preparedness and resiliency of the community. Community resiliency consists of three key factors:

1. The ability of first responder agencies (e.g. fire, law and EMS) to divert from their day-to-day operations to the emergency effectively and efficiently.
2. The strength of the emergency management system and organizations within the region, to include EOC's, mass notification systems and communication systems.
3. The civil preparedness of the region's citizens, businesses and community organizations.

The San Diego Operational Area is constantly focused on improving the region's resiliency by focusing on enhancing all three of these components

When an emergency occurs within the Operational Area, the response is led by the incident commanders in the field, and supported and coordinated by the region's EOCs. In major disasters, the response is conducted in two phases. First, the region assembles and allocates all needed local resources to respond to the incident. Over time, the focus transitions to effectively and efficiently integrating state and federal support resources into the response.

Coordination

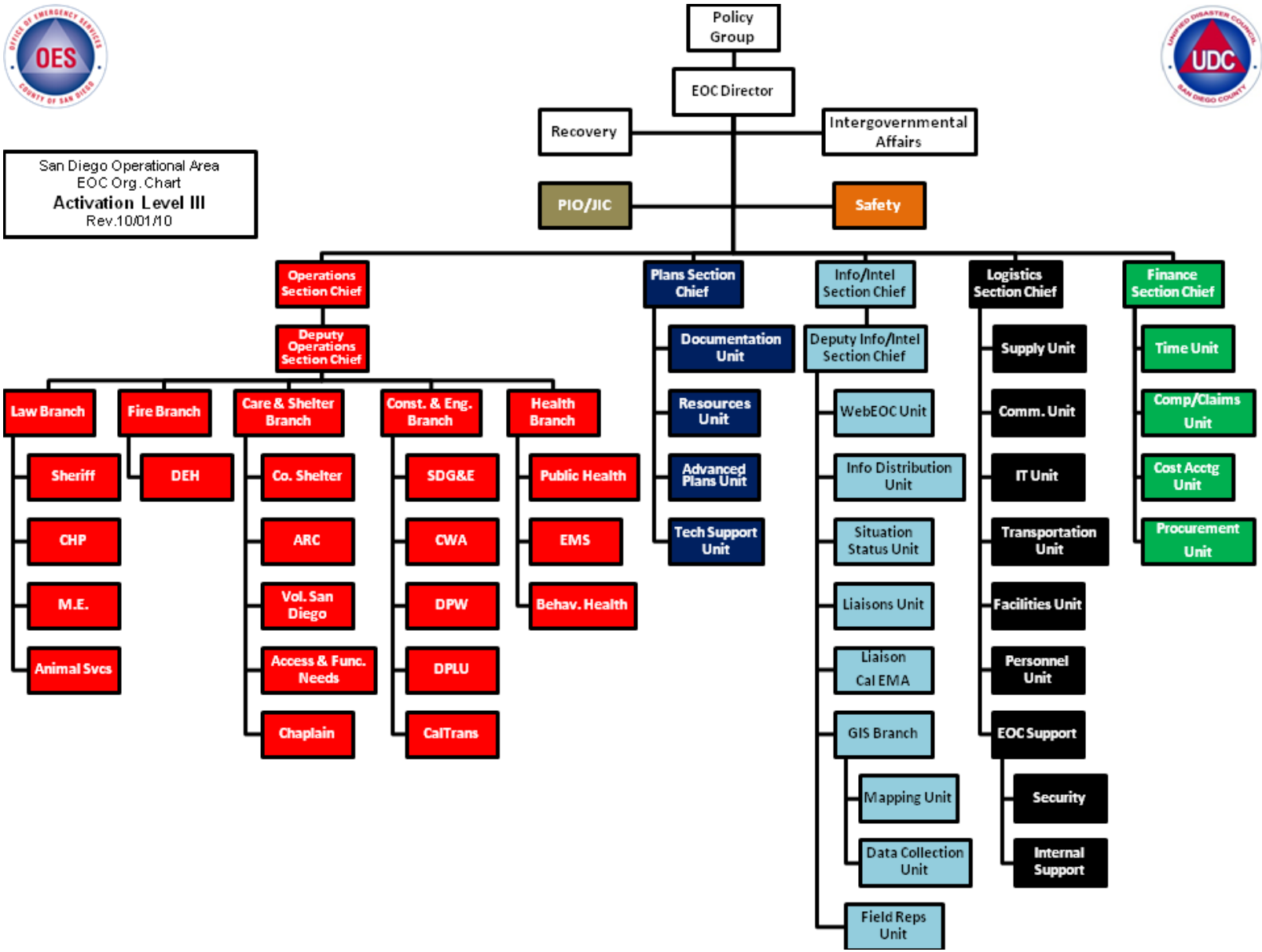
Coordination within the Management Section in the EOC is one of the keys to successful response operations. When decision makers are together in one location, staff and resources can be utilized in the most effective manner. This section includes directors or representatives of County Departments, selected and led by the Director/Coordinator of Emergency Services (Chief Administrative Officer) or his/her designee, and Directors of Special Districts affected by the disaster.

When a disaster occurs, communication and coordination with Operational Area/ County/City Departments, Special Districts, other cities, news media, state and federal agencies, and all others "outside" of the EOC, must be accurate and consistent with the Policy guidelines and directives.

The San Diego County Operational Area Emergency Plan has been designed to follow the SEMS and NIMS.

FIGURE 1

EOC FUNCTIONAL CHART



Priorities

The following are priorities when conducting and coordinating disaster operations:

1. Meeting the immediate needs of people (rescue, evacuation, medical care, public information, food, shelter, clothing).
2. Restoration of facilities, whether public or privately owned, that are essential to the health, safety and welfare of citizens (sanitation, water, electricity, road, street, and highway repair).
3. Meeting the rehabilitation needs of people (temporary housing, food stamps, employment, etc.).
4. As much as possible, providing for the recovery of the community to its pre-disaster state.

Emergency Operations Center

The EOC is one of the most important elements in the coordination of successful response and recovery operations. With centralized decision making, personnel and other resources can be utilized more effectively. Coordination of activities ensures that all tasks are accomplished with little or no duplication of effort, and with the highest probability of success.

Day-to-day operations are conducted from departments and agencies that are widely dispersed throughout the Operational Area. When a major emergency or disaster occurs, centralized management is needed to facilitate a coordinated response by the Chief Administrative Officer (CAO) as Coordinator of Emergency Services for the Operational Area (if elected to that position by the Unified Disaster Council), and as Director of Emergency Services for the County, emergency services personnel, and representatives from special districts and private sector organizations with assigned emergency responsibilities. The EOC provides a central location of authority and information, and allows for face-to-face coordination among the personnel who direct local services in response to a disaster.

The EOC is located in Kearny Mesa at the County Operations Center. Alternate EOCs are located in Kearny Mesa and the City of Escondido. The Office of Emergency Services maintains Standard Operating Procedures for activating the EOC.

The following activities are performed in the EOC:

1. Receipt and dissemination of emergency alert and warning.
2. Collection and analysis of situational information.
3. Management and coordination in support of emergency operations.
4. Collection, analysis, and reporting of damage data.
5. Provision of emergency information and instructions to the public.
6. Maintenance of liaison with support agencies, other jurisdictions, and other levels of government.

Proclamations of Emergency

Local Emergency Proclamation

A. In the event of a disaster or condition of extreme peril to persons and property within a jurisdiction, which is beyond the capability of local responders to manage, the Board of Supervisors fills the role of initiating a Proclamation of Local Emergency for the entire Operational Area. The County Chief Administrative Officer (CAO) may also proclaim a Local Emergency. Attachment B of County Ordinance 9970 designates the CAO as the Director of Emergency Services of the unincorporated area and is responsible for the operational response to an emergency. In the event that the CAO is unavailable to serve as Director, the persons designated as the CAO's successors are the Assistant Chief Administrative Officer (ACAO) and the Deputy Chief Administrative Officer (DCAO) of the Public Safety Group.

B. If made by the CAO the Proclamation must be ratified by the Board within seven days. In either case, the Proclamation must be made within ten days of the occurrence to qualify the County for State assistance.

C. The Director of the County Office of Emergency Services (OES) is authorized to proclaim a local emergency when the Board is not in session and the CAO and the other officers designated in the line of succession are unavailable to proclaim an emergency, provided that the Board ratifies the proclamation within seven days.

D. The Proclamation accomplishes the following:

1. Provides public employees and the Board of Supervisors with legal immunities for emergency actions taken.
2. Enables the Board of Supervisors to act as a Board of Equalization, to reassess damaged property and provide property tax relief.
3. Allows the CAO (or his successors) to:
    - Establish Curfews
    - Take any preventive measures necessary to protect and preserve the public health and safety.
    - Exercise other authorities as established by Ordinance 8183 (i.e. to issue new rules and regulations, expend funds, or to obtain vital supplies and equipment).
    - The Board shall review at its regular meetings the need for continuing the local emergency proclamation at least every 30 days, however, reviews shall not take place more than 21 days after the previous review. The Board should proclaim the termination of the local emergency at the earliest possible date.

State of Emergency

A. After or as part of the Proclamation of a Local Emergency, the Board, or City Council may request (by resolution) that the Governor proclaim a State of Emergency. A copy of the request for a Governor's Proclamation, with the following supporting data, must be forwarded to the Secretary, California Emergency Management Agency (Cal EMA) through the Operational Area:

   1. Copy of the Local Emergency Proclamation,
   2. Damage Assessment Summary information.

B. The Governor's State of Emergency allows for the following:

   1. Mandatory mutual aid may be exercised.
   2. The Governor has the authority to commit State resources, for example, National Guard, California Conservation Corps (CCC crews).
   3. The Governor may request the President to declare an Emergency or Major Disaster.

Presidential Declaration

After or as part of a Proclamation of a State of Emergency, the Governor may request that the President declare an Emergency or Major Disaster. The Presidential Declaration allows for Federal disaster assistance and resources.

Emergency Managers Mutual Aid (EMMA)

Pursuant to the Master Mutual Aid Agreement, the California Emergency Council approved the Emergency Managers Mutual Aid (EMMA) Plan on November 21, 1997. The EMMA Plan outlines the policies for the program. The purpose of EMMA is to support disaster operations in affected jurisdictions by providing professional emergency management personnel.

The EMMA system is composed of emergency management personnel from local and state government. The process for the allocation of resources is as follows:

1. The county, cities, and special districts will forward their requests for mutual aid through the Operational Area.
2. The Operational Area will act as the coordinator point between the county, cities, and special districts and the Cal EMA Southern region.
3. The OES regional offices will act as the coordination point and facilitate mutual aid among Operational Areas.
4. The Cal EMA headquarters will facilitate the provision of mutual aid among Cal EMA regions.

III. EOC Organization
(See Figure 1)

During emergency operations, the Operational Area EOC, in accordance with the Standardized Emergency Management System, is organized into six major functional areas. They are: (a) Management, (b) Operations, (c) Planning, (d) Logistics, (e) Finance/Administration, and (f) Information/Intelligence.

There are a number of procedural responsibilities common to all of the sections. They are: gathering information and verification; making decisions; coordinating; briefing; advising; following procedures; providing, notifying and scheduling staff; and keeping comprehensive records.

For detailed EOC responsibilities see the San Diego Operational Area EOC Position Checklists.

Management

The Management Section consists of those responsible for the overall management of the emergency. In the OA EOC, this group is referred to as the “Policy Group” and includes the Director of Emergency Services (CAO) and the Directors or representatives from the County departments and/or Special Districts affected by the emergency. The responsibilities of this Management Section are:

1. Manage EOC functions and coordinate the overall response/recovery effort, including prioritizing, decision-making, coordination, tasking, and conflict resolution within the EOC.
2. Report to the Board of Supervisors.
3. Report to Cal EMA through the Operational Area.
4. Inter-jurisdictional coordination.
5. Activation, including notification and recall, and deactivation of the EOC.

Management Section Support

In the OA EOC, the Policy Group supporting positions include the County Communications Office, County Communications Director, Area Law Enforcement Coordinator, County Counsel, Assistant CAO, DCAO for Community Services, Chief Financial Officer, Human Resources Director and other advisors as appropriate. Policy Support is intended to provide information, expertise and advice to the EOC Director and the Policy group. In addition, Policy Support is responsible for the dissemination of information to the public. Some key responsibilities are: emergency public information, rumor control, public inquiry and legal advice.

The advisors participate in the EOC at the request of the CAO.

Planning

The Planning Section is responsible for gathering, analyzing, evaluating, and disseminating

technical information and making recommendations to the EOC Director. While the Operations Section is concerned with immediate strategic response to the disaster, Planning is looking and planning ahead. Planning's function is to maintain information on the overall response effort and to develop the EOC Action Plan for the next operational period. The major responsibilities of this Section are documentation, coordination of resources and advance planning.

Operations

The Operations Section includes all activities which are directed toward the reduction of the immediate hazard, establishing control, and restoration of County/Special District operations. This Section consists of those departments or agencies that are responsible for public safety and carrying out response activities. The individual agencies receive and evaluate requests for assistance and resources, establish priorities, and relay operational status and information to the Management Section. In larger emergencies some may also have coordinating roles such as the Area Fire Coordinator or Area Law Enforcement Coordinator (Sheriff). The County Public Health Officer also has an area-wide coordinating role in some types of emergencies.

Among those functions usually represented in the Section are Fire and Rescue, Law Enforcement, Public Health, Emergency Medical Services, Environmental Health, Care and Shelter, Animal Services and the Medical Examiner.

The overall responsibility of this Section is to coordinate with field operations.

Logistics

The Logistics Section consists of those departments with responsibilities for the procurement and payment of personnel and equipment necessary for the management of and recovery from the emergency. The Logistics Section coordinates the procurement and provision of emergency resources and support for the response and recovery operations being conducted in the field as well as those in the EOC. The Operational Area EOC Logistics Section coordinates the procurement and provision of emergency resources and support for the entire Operational Area.

In the Operational Area EOC this Section includes such County departments as Purchasing & Contracting, and Human Resources; as well as specialists such as water or utility company representatives.

Finance/Administration

The Finance/Administration Section is responsible for all finance, emergency funding and cost accountability functions for EOC operations and for supervising branch functions providing financial and contracting services for EOC operations within its jurisdiction. Some of these functions may include:

1. Financial expenditure and funding briefings.
2. Interagency financial coordination.
3. Finance and contract fact-finding.

4. Fiscal and emergency finance estimating.
5. Operating procedure development and financial planning.
6. Labor expense and accounting.
7. Cost analysis, cost accounting and financial auditing.
8. Disbursement and receivables management.
9. Necessary funding transfers.
10. Special drafts, exchanges and lending controls.
11. Payroll administration.
12. Emergency currency, script and rationing control.

Information/Intelligence

The Information/Intelligence Section is responsible for tracking the emergency and providing information to the OA EOC Director and Policy Group on the overall effectiveness of the policies established. The Information/Intelligence Section Chief manages the activities of: situation status, including information gathering and verification via WebEOC, information distribution, liaisons, Geographic Information Systems (GIS), field representatives and maintaining maps and displays.

IV. Functional Responsibilities

The following lists the functional responsibilities within the Operational Area Emergency Plan.

Management Section

Purpose

To provide leadership in the EOC, determine policies and priorities, and manage the overall response within the jurisdiction's boundaries.

Personnel

County government and Special District department heads serve in the Management Section at the discretion of the jurisdiction's Emergency Services Director and /or EOC Director. The following list provides a probable OA EOC Policy Group staffing for a major event:

A. Chief Administrative Officer (CAO) (Emergency Services Coordinator)
B. Deputy CAO – Public Safety Group
C. Deputy CAO – Land Use and Environment Group
D. Public Health Officer
E. EOC Director (Director of OES)
F. Area Law Enforcement Coordinator

G. Area Fire Coordinator

H. Medical Examiner representative (if required)

I. Director, Department of Public Works (if required)

J. Director, Health and Human Services Agency

K. Director, Department of General Services (if required)

Responsibilities

A. Ensure long-range, logistical, and recovery planning.

B. Maintain active liaison with other jurisdictions and the Operational Area.

C. Ensure emergency proclamations are made.

D. Keep the Board of Supervisors informed.

Fire and Rescue Operations

(see Annex B, Fire and Rescue Mutual Aid Operations)

Purpose

To coordinate fire and rescue response within the jurisdiction. To establish liaison between the Emergency Operations Center and field operations, as well as to facilitate prioritization of fire resource needs during emergency operations. To coordinate the search efforts for trapped and injured persons and extricate them safely and quickly.

Personnel

A. Designated liaison from the appropriate fire agency.

B. Fire Chief, or designee, in OA EOC Policy Group.

C. Fire representative, as Rescue Coordinator, in Operations.

D. Law Enforcement personnel.

E. Other agency representatives as needed, from both the public and private sectors.

Responsibilities

The Fire Chief of the appropriate fire agency will assign a liaison to the Emergency Operations Center and provide support for EOC and field operations.

A. Establish communications between the Fire Dispatch Center and the EOC.

B. Keep the Operations Section informed of critical activities and pending needs of the fire agency (ies) responding to the emergency.

C. Coordinate with other functional groups, such as Law Enforcement, Medical, Care and Shelter, etc., as required.

D. Support for EOC and field operations

Law Enforcement

(see Annex C, Law Enforcement Mutual Aid Operations)

Purpose

To coordinate the law enforcement response during a disaster. To coordinate the evacuation, dispersal or relocation of persons from threatened or hazardous areas to less threatened or safe areas.

Personnel

A. The Sheriff or a designated representative in Policy.

B. A Sheriff representative in law enforcement operations in the Operations Section.

C. Other personnel, as needed.

Responsibilities

A. Support law enforcement response within the jurisdiction.

B. Support and liaison with appropriate agencies for traffic control and route recovery.

C. Support movement of persons from hazardous areas, including evacuation and traffic control.

D. Ensure access control measures to prevent unauthorized persons from entering vacated, or partially vacated, areas.

Medical

(see Annex D, Mass-Casualty Operations)

Purpose

To coordinate disaster medical operations within the Operational Area through the procurement and allocation of public and private medical resources; the activation and operations of Field Treatment Sites (FTSs); the transportation of casualties and medical resources; and the relocation of patients from damaged or untenable health facilities. This function will be coordinated at the Operational Area EOC. All personnel and functions detailed below will be present at the Operational Area EOC.

Personnel

A. Policy Group - Medical Director, Emergency Medical Services (EMS)

B. Operations

1. Director, EMS
2. Medical and Health Operational Area Coordinator
3. EMS Staff as needed

Responsibilities

A. Coordinate the procurement and allocation of the medical resources required to

support disaster medical operations.

B. Coordinate the transporting of casualties and medical resources to health care facilities, including FTSs, within the area and to other areas, as requested.

C. Organize a system for staffing and operating FTSs and Disaster Support Areas.

D. Request and respond to requests from the Regional Disaster Medical/Health Coordinator (RDMHC) for disaster assistance.

E. Maintain status of medical resources, transportation, and communication services within the Operational Area.

F. Maintain liaison with the Red Cross, volunteer service agencies, and other representatives within the Operational Area.

G. Maintain liaison with the coordinators of other emergency functions such as communications, fire and rescue, health, law enforcement and traffic control, transportation, and care and shelter.

H. Coordinate and provide support to medical activities at the scene.

Public Health

(see Annex E, Public Health Operations)

Purpose

To coordinate public health operations within the Operational Area, by providing preventive health measures and communicable disease control. This function will be coordinated at the Health and Human Services Agency-Department Operations Center (DOC). All personnel and functions detailed below will be present at the HHSA DOC.

Personnel

A. Policy Group - Director, Health and Human Services Agency or designee

B. DOC Operations

1. HHSA DOC
2. Emergency Medical Services (EMS) DOC

Responsibilities

A. Coordinate the procurement and allocation of public health resources required to support disaster public health operations.

B. Request and respond to requests from the Regional Disaster Medical/Health Coordinator for disaster assistance.

C. Maintain status of public health resources within the Operational Area.

D. Coordinate all public health related activities among other local public and private response agencies or groups, as well as state and federal agencies.

E. Provide preventive health services.

Medical Examiner

(see Annex F, Department of the Chief Medical Examiner Operations)

Purpose

To manage medical examiner operations during a disaster.

Personnel

A. The Medical Examiner or designated representative in the Policy Group.

B. Disaster Control Staff Coordinator, in the Operations Section.

Responsibilities are to establish and manage all medical examiner operations, including the following:

A. Medical Examiner Emergency Teams

B. Body Staging Areas

C. Establish a family assistance center

D. Temporary morgues and transportation

E. Identification and listing of victims

F. Notification of next of kin

G. Emergency procurement and allocation of supplies and resources

H. Request mutual aid, if required

Care and Shelter Operations

(see Annex G, Care and Shelter Operations)

Purpose

To assure the provision of food, shelter, clothing and basic welfare needs to the victims of disaster; to establish contact and coordination with the American Red Cross (ARC) and provide assistance, as required.

Personnel

A. Designated Care and Shelter Coordinator.

B. Liaison personnel from the Red Cross (as assigned).

Responsibilities

A. Care and Shelter Coordinator

1. Coordinate local government support to the Red Cross.
2. Coordinate resource and mutual aid requests between the Red Cross and other government departments or agencies.
3. Provide care and shelter to disaster victims until the Red Cross or other private disaster relief organizations are able to fulfill that responsibility.

B. Red Cross Liaison

1. Maintain contact with Red Cross Headquarters and keep the Care and Shelter Coordinator informed of Red Cross operations during the disaster.
2. Make requests to the Care and Shelter Coordinator for assistance in providing care and shelter to disaster victims.

Environmental Health

(see Annex H, Environmental Health Operations)

Purpose

To coordinate environmental health operations within the San Diego Operational Area by providing environmental health protection associated with disasters.

Personnel

A. Policy Group - Director, Department of Environmental Health or designee

B. Operations - Chief, Hazardous Materials Division, or designee

Responsibilities

A. Coordinate procurement, allocation and distribution of environmental health resources required to support disaster environmental health operations.

B. Supervise food delivery system and assist in water supply, waste disposal, and housing.

C. Establish methods and procedures for vector and rodent control activities.

D. Advise on all occupational hazards as they occur.

E. Identify hazardous materials released, evaluate risks to the general public, and advise on mitigation measures to modify or reduce environmental health impact.

Communications and Warning Systems

(see Annex I, Communicationsand Warning Systems)

Purpose

To describe the various communication systems available throughout the Operational Area. This includes systems used by Operational Area agencies and certain mutual aid frequencies common to almost all law enforcement and fire agencies.

Personnel

Various agencies and organizations.

Responsibilities

Provide and maintain communications in the San Diego Operational Area for day-to-day and disaster operations.

Construction and Engineering

(see Annex J, Construction and Engineering Operations)

Purpose

To coordinate the allocation of engineering resources (construction equipment, materials, etc.) required for emergency debris clearance, route recovery, shelter construction, and other engineering operations.

Personnel

A. The Director of the Department of Public Works or designated representative in Policy.

B. Assigned representative in the Operations Section.

Responsibilities

A. Develop and maintain current records of road conditions throughout the Operational Area during emergencies.

B. Restore, maintain and operate essential services within the jurisdiction such as roads, sewers and drainage facilities.

C. Construct emergency facilities, such as bridges.

D. Assist in search and heavy rescue.

E. Assist in providing for repair, modification and/or construction of emergency facilities and housing.

F. Maintain an inventory of sources and provide for procurement and allocation of heavy construction equipment.

G. Manage and coordinate jurisdictional transportation facilities.

H. Maintain an inventory of sources and provide for procurement and allocation of transportation resources.

Logistics

(see Annex K, Logistics)

Purpose

To coordinate the procurement and provision of emergency resources and support and advise the EOC Director on resource allocations, distribution, priorities, expenditures, and related matters.

Personnel

A. Director, Purchasing and Contracting, or designee

B. General Services Representative

C. Department of Human Resources Representative

D. Utility representative

E. Sheriff's Data Services

Responsibilities

A. Implement emergency resources functions through pre-designated assignments from the Policy group.

B. Procure and allocate essential resources (personnel, services and material) to support emergency operations.

C. Oversee the distribution and inventory of food stocks and other essential supplies for emergency subsistence.

D. Procure and allocate required transportation, fuel and similar equipment resources.

E. Provide for maintenance and repair of telecommunications, potable water systems, government-owned electrical, sanitation, and other utility systems and services.

F. Acquire, inspect and provide supplies for care and shelter facilities, multipurpose staging areas and fixed or mobile clinical and medical facilities.

G. Establish control of resources in a manner compatible with the Operational Area Emergency Plan.

H. Provide accountability of resources requested and expended.

Public Information

(see Annex L, Emergency Public Information)

Purpose

To provide the public with accurate and timely information and instructions through the news media.

Personnel

A. Director County Communications Officer or designee in Policy Group

B. Media Team/PIO staff

C. Departmental liaisons as required

Responsibilities

A. Secure briefings from EOC staff

B. Give regular briefings to news media representatives

C. Act as jurisdictional spokespersons

D. Prepare and disseminate news releases

E. Prepare and disseminate Emergency Alert System (EAS) messages for release by the Operational Area EOC. Requests from other jurisdictions for EAS messages will be disseminated upon request.

F. Coordinate media interviews with jurisdictional officials.

G. Monitor news reports and correct inaccurate information.

H. Maintain liaison with Public Information Officers (PIOs) from other agencies and jurisdictions.

I. Notify the news media of any changes in EOC status.

J. Establish Joint Information Center (JIC)

Behavioral Health

(see Annex M, Behavioral Health Operations)

Purpose

To coordinate behavioral health disaster response operations within the Operational Area by providing outreach, intervention and emergency psychological services.

Personnel

A. Behavioral Health Director(s)

B. Behavioral Health Disaster Coordinator

C. Assistant Disaster Coordinator

Responsibilities

A. Coordinate behavioral health intervention services for disaster victims and emergency response personnel, as well as the general public.

B. Maintain status of behavioral health resources, including facilities and personnel within the Operational Area.

C. Coordinate all behavioral health related activities among other local public and private response agencies or groups, as well as state and federal agencies

D. Provide behavioral health debriefing sessions for EOC staffs.

E. Coordinate field operations/field survey teams.

Animal Services

(see Annex O, Animal Services)

Purpose

To provide immediate care and control of animals in the event of a major emergency or disaster and protect the health and safety of the community.

Personnel

A. Director, Department of Animal Services for the Policy Group

B. Assigned representative in Operations Section

Responsibilities

A. Coordinate emergency Animal Services operations.

B. Develop and organize a system to identify and track animals received during a

disaster.

C. Develop criteria establishing holding time and euthanasia standards for disaster situations.

Terrorism Protocol (see Annex P)

Annex P is an Executive Summary of the Terrorism Protocol for the San Diego County Operational Area.

ATTACHMENT A-1

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(By Board of Supervisors/City Council)
(Page 1 of 2)

WHEREAS, Ordinance No._____of the County/City of_____empowers the Board of Supervisors/City Council to proclaim the existence or threatened existence of a Local Emergency when said jurisdiction is affected, or is likely to be affected, by a public calamity; and

WHEREAS, said Board of Supervisors/City Council has been requested by the Director of Emergency Services of said county/city to proclaim the existence of a Local Emergency therein; and

WHEREAS, said Board of Supervisors/City Council does hereby find that conditions of extreme peril to the safety of persons and property have arisen within said county/city, caused by_____, (fire, flood, storm, epidemic, earthquake, drought, etc.) commencing on or about _____ __.m. on the ____ day of _____,_____; and

WHEREAS, the Board of Supervisors/City Council does find that the aforesaid conditions of extreme peril does warrant and necessitate the Proclamation of the existence of a Local Emergency;

NOW, THEREFORE, IT IS HEREBY PROCLAIMED by the Board of Supervisors/City Council of the County/City of _____, that a Local Emergency exists throughout said county/city and that said Local Emergency shall be deemed to continue to exist until its termination is proclaimed by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said Local Emergency the powers, functions, and duties of the Director of Emergency Services and the emergency organization of this county/city shall be those prescribed by state law, charter, ordinances, and resolutions of this jurisdiction approved by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND REQUESTED that the Governor of the State of California find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County.

IT IS FURTHER PROCLAIMED AND ORDERED that the Director of Emergency Services and the _____ are hereby designated as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance.

ATTACHMENT A-1 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(By Board of Supervisors/City Council)
(Page 2 of 2)

IT IS FURTHER ORDERED that a copy of this Proclamation of Local Emergency be forwarded to the State Director of the Cal EMA with a request that;

1. The State Director find the Proclamation of Local Emergency acceptable in accordance with provisions of the Natural Disaster Assistance Act; and that

2. The State Director forward this Proclamation and request for a State Proclamation and Presidential Declaration of Emergency to the Governor of California for consideration and action.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____, San Diego County, State of California, this ____ day of____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By: _____

ATTACHMENT A-2

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(by Director of Emergency Services)
(Page 1 of 2)

WHEREAS, Ordinance No. _____ of the County/City of_____empowers the Director of Emergency Services to proclaim the existence or threatened existence of a Local Emergency when said county/city is affected, or likely to be affected, by a public calamity and the Board of Supervisors/City Council is not in session; and

WHEREAS, the Director of Emergency Services of the County/City of_____does hereby find that conditions of extreme peril to the safety of persons and property have arisen within said county/city, caused by _____(fire, storm, epidemic, _____ riot, earthquake, or other cause) commencing on or about __.m. on the _____ day of _____, _____; and

WHEREAS, the Board of Supervisors/City Council of the County/City of_____is not in session and cannot immediately be called into session; and

WHEREAS, this Proclamation of Local Emergency will be ratified by the Board of Supervisors/City Council within seven days of being issued.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED by the Director of Emergency Services for the County/City of _____, that a Local Emergency exists throughout said county/city and that said Local Emergency shall be deemed to continue to exist until its termination is proclaimed by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said Local Emergency the powers, functions, and duties of the Director of Emergency Services and the emergency organization of this county/city shall be those prescribed by state law, charter, ordinances, and resolutions of this jurisdiction and by the Operational Area Emergency Plan as approved by the Board of Supervisors/City Council.

IT IS FURTHER PROCLAIMED AND REQUESTED that the Governor of the State of California find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County.

IT IS FURTHER PROCLAIMED AND ORDERED that the Director of Emergency Services and the _____ are hereby designated as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance.

ATTACHMENT A-2 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION OF LOCAL EMERGENCY
(by Director of Emergency Services)
(Page 2 of 2)

IT IS FURTHER ORDERED that a copy of this Proclamation of Local Emergency be forwarded to the State Director of the Cal EMA with a request that;

1. The State Director find the Proclamation of Local Emergency acceptable in accordance with provisions of the Natural Disaster Assistance Act; and that

2. The State Director forward this Proclamation, and request for a State Proclamation and Presidential Declaration of Emergency, to the Governor of California for consideration and action.

PASSED AND ADOPTED by the Director of Emergency Services for the County/City of _____ _____, State of California, this _____ day of _____, _____.

_____
Director of Emergency Services

ATTACHMENT A-3

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
RATIFYING LOCAL EMERGENCY
PROCLAIMED BY THE
DIRECTOR OF EMERGENCY SERVICES
(Page 1 of 2)

WHEREAS, Ordinance No. _____ of the County/City of _____empowers the Director of Emergency Services to proclaim the existence, or threatened existence, of a Local Emergency when said County/City is affected, or likely to be affected, by a public calamity and the Board of Supervisors/City Council is not in session subject to ratification by the Board of Supervisors/City Council within seven days; and

WHEREAS, such Proclamation entitles the Director of Emergency Services, and the emergency organization of this County/City, to all the powers, functions, and duties prescribed by state law, charter, ordinances, and resolutions of this jurisdiction and by the Operational Area Emergency Plan during the existence of said Local Emergency; and

WHEREAS, conditions of extreme peril to the safety of persons and property did arise within this County/City caused by _____(fire, flood, storm, epidemic, riot, earthquake, or other cause), commencing on the _____day of _____, at which time the Board of Supervisors/City Council was not in session and could not be called into session; and

WHEREAS, the Director of Emergency Services of the County/City of_____did issue a Proclamation of Local Emergency within said County/City on the _____ day of _____, _____; and

WHEREAS, said Proclamation requested the Governor of the State of California to find and proclaim San Diego County to be in a State of Emergency and that he/she request a Presidential Declaration of Emergency for San Diego County; and

WHEREAS, said Proclamation designated _____ as the authorized representatives of the County/City of _____ for the purpose of receipt, processing, and coordination of all inquires and requirements necessary to obtain available state and federal assistance; and

WHEREAS, the Board of Supervisors/City Council does hereby find that the aforesaid conditions of extreme peril did warrant and necessitate the Proclamation of Local Emergency and request for State Proclamation and Presidential Declaration of Emergency.

ATTACHMENT A-3 (Continued)

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
RATIFYING LOCAL EMERGENCY
PROCLAIMED BY THE
DIRECTOR OF EMERGENCY SERVICES
(Page 2 of 2)

NOW, THEREFORE, BE IT RESOLVED AND PROCLAIMED that the Proclamation of Local Emergency and request for a State Proclamation and Presidential Declaration of Emergency for San Diego County issued by the Director of Emergency Services on _____, ____, is hereby ratified and confirmed.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____, San Diego County, State of California, this ____ day of _____, ____,by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date: _____ By:_____

ATTACHMENT A-4

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

RESOLUTION FOR CONTINUANCE OF LOCAL EMERGENCY

WHEREAS, Ordinance No._____of the County/City of empowers the Board of Supervisors/City Council to proclaim the existence, or threatened existence of a Local Emergency when said jurisdiction is affected, or is likely to be affected, by a public calamity; and

WHEREAS, the Board of Supervisors/City Council did find that conditions of extreme peril to the safety of persons and property, caused by _____(fire, flood, storm, epidemic, earthquake, drought, etc.), did arise within said County/City, commencing on the ____ day of ___, _____; and

WHEREAS, the Board of Supervisors/City Council did proclaim/ratify the existence of a Local Emergency within said jurisdiction on the _____ day of _____, _____ and requested the Governor of California proclaim San Diego County to be in a state of emergency; and further requested that the Governor request a Presidential Declaration; and

WHEREAS, Government Code, Section 8630, requires that Proclamations of Local Emergency must be reaffirmed by the governing body of the effected jurisdiction every 14 days during the time the Local Emergency remains in effect; and

WHEREAS, conditions of extreme peril to the safety of persons and property caused by said emergency continue to exist, and continue to be beyond the control of local resources, services, personnel, and equipment;

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors/City Council of the County/City of _____ proclaim that the Local Emergency which first began on the _____ day of _____, _____ continues to exist.

BE IT FURTHER RESOLVED that the Board of Supervisors/City Council of_____the County/City of _____ hereby issues this _____ Resolution of Continuance of Local Emergency reaffirming the continuation of the local emergency.

BE IT FURTHER RESOLVED that said Local Emergency shall continue to exist for an additional 14 days unless terminated earlier by this Board of Supervisors/City Council.

IT IS FURTHER ORDERED that a copy of this Proclamation of Continuance be forwarded to the State Director of the Governor's Office of Emergency Services.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

Clerk of the Board of Supervisors/City Clerk

Date:_____ By:_____

ATTACHMENT A-5

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES OPERATIONAL AREA

PROCLAMATION
TERMINATION OF LOCAL EMERGENCY
(Page 1 of 1)

WHEREAS, the Board of Supervisors/City Council of the County/City of ____ found that conditions of extreme peril to the safety of persons and property have arisen within said County/City caused by _____(fire, flood, storm, epidemic, earthquake, drought, etc.) commencing on _____, _____; and

WHEREAS, the Board of Supervisors/City Council issued/ratified a Proclamation of Local Emergency on _____ , _____, and

WHEREAS, the conditions of extreme peril caused by the emergency are now deemed to be within the control of the normal protective services, personnel, equipment, and facilities of said County/City.

NOW, THEREFORE, IT IS PROCLAIMED AND ORDERED by the Board of Supervisors/City Council of the County/City of _____, State of California, that said Proclamation of Local Emergency issued/ratified on _____, _____, is hereby terminated.

IT IS FURTHER PROCLAIMED AND ORDERED that the emergency powers, functions, and duties of the Director of Emergency Services and the emergency organization of this County/City authorized by said Proclamation of Local Emergency and as prescribed by state law, charter, ordinances, and resolutions of this jurisdiction, are terminated.

IT IS FURTHER ORDERED that a copy of this Proclamation of Termination of Local Emergency be forwarded to the State Director of the Governor's Office of Emergency Services.

PASSED AND ADOPTED by the Board of Supervisors/City Council of the County/City of _____, San Diego County, State of California, this _____ day of _____, _____, by the following vote:

Ayes:
Noes:
Absent:

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the minutes of the Board of Supervisors/City Council.

By:_____
Clerk of the of Board of Supervisors/City Clerk

ATTACHMENT B

WARNING SYSTEM

I. General

The warning system is the means to relay to the public notices from the local, State or Federal government of impending or actual disaster or attack. Appropriate responses and the most effective use of warning information may be limited by the amount of time available.

Actions

Warning actions are characterized by requiring high priority for a short period of time, the use of mass media systems for passing warning to the public, the small number of workers necessary to operate the system, the demand for fast activation of the system on short notice, and the need to maintain readiness to repeat all actions in the event of successive alerts or attacks.

The National Warning System (NAWAS) sends out warning information, which is received at the Sheriff's Communication Center and relayed to the Office of Emergency Services (OES). The public is then warned by means of the Emergency Alert System (EAS) and any other means, including mobile loudspeakers, when appropriate. The EAS is a national system which is activated by the President. It can also be activated by Operational Area authorities for local use. EAS is discussed further on the next page.

Alternate means of warning are via the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, and the Radio Amateur Civil Emergency Service (RACES) network.

Notice of warning is also broadcast from the various county and city communications centers to special facilities (schools, hospitals, fire stations, utility stations, etc.). Key workers of emergency organizations may be alerted by telephone or radio. The EAS and AlertSanDiego Systems provide coverage for a large part of the population.

The Office of Emergency Services maintains pre-scripted, hazard-specific warning messages for high impact events which require time sensitive warnings.

Warning Information

Authorized EAS stations will broadcast warning information as requested under the EAS Operational Area Agreement.

Warning - Peacetime Emergencies

Warning of an extraordinary peacetime emergency may be received by local government over the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, NAWAS, the AlertSanDiego System, and/or other means.

II. Alert/Notification Systems

Emergency Alert System (EAS)

1. General

   The State of California has been divided into "EAS Operational Areas" for the purpose of disseminating emergency information.

   The San Diego EAS operational area encompasses the entire County. Two stations, KOGO (AM 600) and KLSD (AM 1360) act as the Local Primary (LP) 1 and 2. Other authorized stations continue to operate as conditions permit. There are several radio stations in the San Diego County Operational Area that broadcast in foreign languages to reach the non-English speaking public.

   All authorized stations in each EAS operational area broadcast a common program. A "program entry point" has been established for each EAS area. Emergency services authorities for each jurisdiction will prepare emergency information and action instructions pertinent to the people of their respective jurisdictions, which will be routed to the designated program entry point for broadcast.

2. Operational Considerations

   Authorized stations continue to broadcast on regular assigned frequencies during any type of emergency. They broadcast their call letter identification and the area identification. Listeners are advised to monitor those stations, which serve the area in which they are located, since EAS announcements may vary according to the area served.

3. Facilities

   The program entry point for the San Diego EAS operational area is the Operational Area EOC. Emergency information will be routed to the program entry point. The primary EAS station serving the San Diego EAS Operational Area is KOGO 600 AM and the alternate EAS station is KLSD 1360 AM. The majority of local radio and television stations that are operational after a disaster will be broadcasting emergency information.

AlertSanDiego

In 2006, the County of San Diego implemented the AlertSanDiego (ASD) communications system. ASD is currently available throughout the San Diego Region. ASD enables emergency dispatchers to call residents, via a reverse 911 callout system, and alert them to emergency actions which may need to be taken. ASD combines GIS mapping technologies with 9-1-1 calling data in an easy-to-use interface. The system, which is hosted by Twenty First Century Communications Inc., has the capability of making thousands of calls per hour by using automated calling technology. the Office of Emergency Services, Incorporated Cities, or Sheriff’s Communications Center are responsible for the activation of ASD.

ASD has limitations which include:

1. Phone lines and power must be working for the system to operate.
2. Mobile devices, Voice over Internet Protocol (VoIP), or private branch exchange (PBX- many businesses have their phones hooked up to a PBX) numbers are not in the AT&T database unless they manually registered these numbers at www.alertsandiego.org .
3. If residents are on a dial-up internet connection or subscribe to call blocking services, they will not receive the call.

ATTACHMENT C

DISASTER ASSISTANCE

Depending on the type of disaster, certain types of Federal disaster assistance may be made available after there has been a Presidential Disaster Declaration. Disaster assistance is also possible without a Presidential Declaration. In this case, only State and local assistance would be available.

Some of the Agencies that may be able to provide assistance include:

Federal

A. Small Business Administration (SBA)

Provides information about and takes applications for low-interest home and business loans.

B. Department of Housing and Urban Development (HUD)

Along with local and State resources, provides temporary housing, assistance, and guidance relating to existing Federal Housing Administration (FHA) loans and other low-interest loans, limited home repair, and rental and mortgage payment assistance.

C. United States Department of Agriculture (USDA)

Provides assistance and guidance relating to existing Farmers Home Administration and Rural Electrification Act loans and other low-interest loans.

D. Internal Revenue Service (IRS)

Sometimes is represented and provides income tax assistance.

E. Federal Emergency Management Agency (FEMA)

Sometimes provides grants to individuals for repairs, rental payments and replacement of lost or damaged possessions and to meet other serious disaster related needs.

Sometimes provides partial funds to government for debris removal, and emergency measures taken to save lives and property.

Sometimes provides partial funds for the repair or replacement of damaged Public facilities, and hazard mitigation.

F. Other Federal agencies that may provide assistance are the Veterans Administration,

Social Security Administration, Health and Human Services, and the Food and Drug Administration.

State

A. California Emergency Management Agency (Cal EMA)

Serves as the lead agency for the State

B. Department of Health and Human Services (DHHS)

Provides Individual and Family Grants

C. Employment Development Department

Provides State unemployment compensation for eligible disaster victims and, if implemented, disaster unemployment compensation.

It also furnishes information related to employment and vocational retraining.

D. Department of Housing and Community Development

Provides temporary housing and building inspection to qualified applicants.

E. Department of Veterans Affairs

Provides assistance to victims whose homes or farms are financed under the Cal Vet program.

F. Other possible representation from the State includes the State Contractors Licensing Board, for contractor assistance, and the State Franchise Tax Board, for Income Tax assistance.

In general, local government's role is supportive.

A. San Diego County Office of Emergency Services (OES)

Serves as the lead agency for the Operational Area.

In cooperation with Federal State and other local agencies, may assist in the opening of Disaster Recovery Centers. These are sites where recovery specialists from FEMA, SBA, the County and other local jurisdictions will answer questions and provide recovery information.

B. Health and Human Services Agency (HHSA)

In cooperation with the Red Cross, receives and distributes food and clothing from government and private sources and provides for other personal needs. Provides eligibility workers to do the intake and exit interviews.

C. Department of Planning and Land Use (DPLU), Codes Division

Provides staff to make available information about building permits, zoning and other regulatory requirements.

D. Department of Planning and Land Use, Building Division

Provides building inspectors to inspect homes for safety and needed repairs.

E. Departments of Public Works (DPW)

If requested, provides staff to make available flooding information, including protective measures that can be taken. Also, if requested to do so, may provide staff to read and interpret inundation maps.

F. County Assessor

After some disasters, provides staff to accept applications for reappraisal.

G. Department of Environmental Health (DEH)

If requested, provides staff for: information regarding public health matters such as safety of water and food supplies, adequacy of sewage disposal, and methods of rodent control.

H. Health and Human Services Agency (HHSA)

Provides behavioral health counselors to assist disaster victims.

American Red Cross (ARC)

In coordination with State and County welfare agencies, conducts registration and referral services and provides for individual and family needs; for example, food, clothing, shelter, and supplemental medical assistance.

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX B

Fire And Rescue Mutual Aid Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX B

Fire And Rescue Mutual Aid Operations

ACKNOWLEDGEMENTS

Fire Mutual Aid Operational Plan Task Force

Office of the Operational Area Fire and Rescue Coordinator
Deputy Fire Chief Kelly Zombro, CAL FIRE San Diego Unit
Administrative Officer Don Heiser, San Diego County Fire Authority

Operational Area Plan Review Committee

Deputy Chief Dismas Abelman, Solana Beach Fire Department
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Marisa Balmer, Emergency Services Coordinator, Office of Emergency Services

Edited and Printed

San Diego County Office of Emergency Services

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ANNEX B
FIRE AND RESCUE MUTUAL AID OPERATIONS

I. General

Introduction

This Operations Plan is created and intended to be an integral part of the San Diego County Operational Area Emergency Plan and the current State of California Fire and Rescue Emergency Mutual Aid Plan. In addition, it identifies the implementation procedures for mutual aid and other support.

In keeping with the “All-Risk” capabilities expected of fire service agencies, an effective Operations Plan must include provisions for, but not be limited to, fire and rescue operations, earthquake, floods, civil disturbance, riots, acts of terrorism, industrial accidents, hazardous material incidents, mass casualty incidents, air and water pollution.

Intent

No single community or agency has the ability or resources sufficient to cope with any and all emergencies for which the potential exists. This plan is designed to meet the anticipated needs of local agencies within pre-designated response zones, to access resources of adjacent agencies within the operational area, and to access the resources of other jurisdictions within Region VI or beyond, if necessary, to meet the needs of emergency incidents.

Purpose

1. To provide for the systematic mobilization, organization and operation of fire and rescue resources within each sub-regional response zone of the San Diego County Operational Area and to mitigate the effects of any disaster whether natural or man-caused.
2. To provide a comprehensive and compatible plan for expediting the mobilization and response of available fire and rescue resources on a local, area, region or statewide basis.
3. To provide for an annually updated fire and rescue inventory of all personnel, apparatus and equipment in the Operational Area.
4. To provide a plan for the interchange and dissemination of fire and rescue-related data, directives, and information between fire and rescue officials of local, area, region, state and federal agencies.
5. To identify the resources necessary for locating and removing endangered, trapped, injured, or isolated persons and providing adequate care.
6. To minimize loss of life, subsequent disability, and human suffering by ensuring timely and coordinated firefighting and search and rescue efforts.
7. To provide a system for locating, gaining access to and extricating people in need of assistance.

8. To promote annual training and/or exercises between plan participants.

Planning Basis

1. No community has resources sufficient to cope with any and all emergencies for which potential exists.
2. Fire and rescue managers must preplan emergency operations to ensure efficient utilization of available resources.
3. Basic to California's emergency planning is a statewide system of mutual aid, in which each local jurisdiction relies first upon its own resources.
4. The California Disaster and Civil Defense Master Mutual Aid Agreement between the State of California, each of its counties and those incorporated cities and fire protection districts signatory thereto:
    A. Creates a formal structure for provision of mutual aid.
    B. Provides that no party shall be required to unreasonably deplete its own resources in furnishing mutual aid.
    C. Provides that the responsible local official in whose jurisdiction(s) an incident occurs requiring mutual aid, shall remain in charge at such incident, including the direction of such personnel and equipment provided through mutual aid plans pursuant to the agreement.
    D. Provides that the intra-and inter-area and intra-regional mutual aid operational plans shall be developed by the parties thereof and are operative as between the parties thereof in accordance with the provisions of such operational plans.
    E. Provides that reimbursement for mutual aid extended under the California Fire Service and Rescue System Mutual Aid Plan and the operational plans adopted pursuant thereto, shall only be pursuant to the state law and policies in accordance with the State Office of Emergency Services polices and procedures.
5. Certain specialized types of fire and rescue resources may be considered outside of the mutual aid agreement by the responding agency and therefore may be subject to a pre-established agreement, which may be available only on a reimbursement basis.
6. Note: The United States Forest Service (USFS) is not a participant of the San Diego County Mutual Aid System. Therefore, all of their resources ***may*** fall into the category of “Assistance by Hire” including all applicable administrative charges and use fees. Consequently, all local resources who ***may*** respond to a request by the USFS may also fall into the category of “Assistance by Hire”.
7. The state is divided into six mutual aid regions to facilitate the coordination of mutual aid. San Diego County is located in Mutual Aid Region VI. Through this system, the Governor’s Office is informed of conditions in each geographic and organizational area of the state, and the occurrence of an imminent threat of disaster.

8. In addition to fire and rescue resources, this plan includes both public and private agencies with support capability and/or emergency responsibilities.
9. This plan, as part of the San Diego County Operational Area plan, should be distributed to and discussed with management, command, operational, and support level personnel within each jurisdiction.
10. Emergency operations plans must be continuously reviewed, revised when necessary, and tested to encompass change and refinement consistent with experience gained through disaster operations and training, and changes in resource availability.

Policy Statements

In that Operational and Regional Plans are required to be consistent with the statewide Master Mutual Aid Agreement and the California Fire Assistance Agreement, the following policy statements are applicable to this operational plan.

1. The basic tenets of emergency planning are self-help and mutual aid.
2. Emergency planning and preparation is a task, which must be shared by all political subdivisions and industries as well as every individual citizen.
3. The California Fire Service and Rescue Emergency Mutual Aid Plan provides a practical and flexible pattern for the orderly development and operation of mutual aid on a voluntary basis between cities, cities and counties, fire districts, special districts, county fire department, and applicable state agencies. Normal fire department operating procedures are utilized, including day-to day mutual aid agreements and plans, which have been developed by Fire and Rescue officials.
4. Reimbursement for mutual aid may be provided pursuant to a Governor's disaster proclamation or when conditions warrant invoking the Fire Assistance Agreement. There is no other existing provision for mutual aid reimbursement.
    A. Cal EMA shall be required to provide direction, ongoing guidance and monitoring throughout the process until reimbursement is received by local agencies.
    B. Memorandums of understanding between federal, state and local agencies will not include a commitment of local resources without the expressed, written consent of the local jurisdictions(s).
5. In developing emergency plans, provisions should be made for integrating fire and rescue resources into mutual aid organizations for both fire and non-fire related disaster; i.e., earthquake, flood, radiological defense, hazardous materials incidents, war/terrorism related sheltering and or relocation of significant portions of the population. In planning for war/terrorism related emergencies, provisions for pre and post attack activities should be included; i.e., shelter improvement, radiological monitoring and decontamination.
6. In developing local mutual aid and emergency preparedness plans, provisions must be made for liability and property damage insurance coverage on apparatus and

equipment used beyond the territorial limits of the political subdivision. Consideration must be given to the rights, privileges, and immunities of paid, volunteer, and auxiliary personnel in order that they may be fully protected while performing their duties under a mutual aid agreement or an emergency preparedness plan. Provision is made in state law to deal with these matters, and the procedure outlined therein should be followed to ensure maximum protection.

II. Organization And Responsibilities

Responsibilities of Local Agency

1. Reasonably exhaust local resources before calling for outside assistance.
2. Render the maximum practicable assistance to all emergency stricken communities, under provisions of the San Diego County Fire Mutual Aid Agreement.
3. Upon request, will provide a current annual inventory of all fire department qualified personnel, apparatus and equipment to the Operational Area Fire and Rescue Coordinator through the California Fire Inventory Records System.
4. Provide for receiving and disseminating information, data and directives.
5. Coordinate and conduct necessary training to adequately perform functions and responsibilities during emergencies.
6. Provide resources consistent with standards identified in the Field Operations Guide (ICS 420-1) and the National Incident Management System (NIMS).

Responsibilities of the Fire and Rescue Administrator

The Fire Chief, or senior fire and rescue official by other designated title of each local entity providing public fire protection, will serve as fire and rescue representative to their respective Zone Fire and Rescue Coordinator.

The Fire Chief in whose jurisdiction the incident occurs shall request their dispatch center to contact the Zone Coordinator to respond with mutual aid assistance. Whenever the incident is, or potentially will be, beyond the capabilities of that local agency, the requesting agency should specify the exact resources needed. This resource is generally provided by a request for designated resources by type with a specific capability. When there is a need for specialized equipment, the procedural request should still be made through the Zone Coordinator.

1. Directs all action toward stabilizing and mitigating the emergency including controlling fires, saving lives, safeguarding property and assisting other emergency services in restoring normal conditions.
2. Develops an effective emergency plan for use of the resources under its control and ensures that such a plan is integrated into the emergency plan of the operational area of which the fire and rescue administrator is a part. This plan should include provisions for, but not be limited to, fire and rescue operations, earthquake, floods,

civil disturbance, riots, acts of terrorism, industrial accidents, hazardous material incidents, mass casualty incidents, air and water pollution.

3. Makes maximum use of existing facilities and services within each community prior to requesting assistance from neighboring jurisdictions.
4. Conducts mutual aid activities in accordance with established operational procedures.
5. During emergency operations, keeps the Operational Area Fire and Rescue Coordinator informed on all matters.
6. If receiving mutual aid, maintains responsibility for all logistical support of mutual aid personnel and equipment consistent with the State Mutual Aid Plan and any other local agreements.
7. Prepares personnel and equipment inventories and forward copies to the Operational Area Fire and Rescue Coordinators annually.
8. Maintains an up-to-date schedule for alerting fire and rescue personnel in emergencies and a checklist of timely actions to be taken to put emergency operations plans into effect.
9. Establishes emergency communication capabilities with the Operational Area Fire and Rescue Coordinator.
10. Anticipates emergency needs for such items as emergency fire equipment, commonly used spare parts and expendable supplies and accessories, and ensures functional availability of these items in locations convenient for ready use.
11. Develops a radiological monitoring capability and comprehensive training program within the department.
12. When requesting aid will be in charge of all staffing and apparatus received. Requests for mutual aid will be directed to the Operational Area Fire and Rescue Coordinator via the Zone Coordinator.
13. Provides mutual aid resources when requested by the Operational Area Fire and Rescue Coordinator to the extent of their availability without unreasonably depleting local resources.
14. Maintains appropriate records, data, and other pertinent information of mutual aid resources committed.
15. Provides approximate time commitment and justification of mutual aid needs in request for resources to the Operational Area Fire and Rescue Coordinator. Periodically evaluates the need for mutual aid committed and notifies the Operational Area Fire and Rescue Coordinator.

Responsibilities of the Zone Coordinator/Process for changing Zones

The Zone Coordinator is elected for a three-year term by the fire rescue chiefs within a designated zone. Zones are established by the Fire Advisory Committee. (Reference: San Diego County Fire Mutual Aid Agreement). The criteria for changing zones can be found in ***Appendix* I**. Criteria to form a Zone:

Geographic

- No splitting of agency boundaries
- No isolating of agencies
- Take advantage of highway network
- Balancing of Resources (relative to risk)

Operational Efficiency

- Most efficient access to M/A resources
- Distribution of resources
- Surge Capacity
- Zone Risk (Wildland, High Rise, Urbanization, etc.)

Local agencies requesting assistance from outside their jurisdiction request their dispatch centers to contact their Zone Coordinator. The Zone Coordinator will then contact the Area Fire Coordinator (Echo I). The Zone Coordinator should keep the Op Area Coordinator apprised of any significant changes in resource status

When notified by the local jurisdiction that their resources are inadequate to cope with the emergency at hand, the following steps should be taken:

1. Activate local mutual aid plan.
2. Notify the Operational Area Fire and Rescue Coordinator.
3. Request needed resources.
4. Prepare to receive and utilize mutual aid requested/provided.
5. For further details ***See Appendix* I**

Responsibilities of the Operational Area Fire and Rescue Coordinator

The Operational Area Fire and Rescue Coordinator is elected by the San Diego County Fire Chiefs for a three-year term. The Coordinator shall appoint two or more alternate fire and rescue coordinators.

The Area Fire and Rescue Coordinator is notified whenever required resources exceed the capability of a particular zone, when more than one jurisdiction is involved in mutual aid, and when the incident is within the area but beyond the resources of the jurisdiction in which it occurs.

Zone Coordinators requesting assistance outside their zones request their dispatch centers to contact the Area Coordinator, who will then process the request and provide the closest available resources to respond. Resources will be dispatched using the criteria found in the categories listed in the Field Operations Guide, ICS 420-1.

1. Organizes and acts as chairperson of an Operational Area Fire and Rescue Coordinating Committee composed of the Alternate Area Fire and Rescue Coordinators and/or fire chiefs within the operational area. The committee may include others as deemed necessary by the chairperson. This committee shall meet at least once each year and may hold additional meetings as deemed necessary by the chairperson.
2. In cooperation with the Operational Area Fire and Rescue Coordinating Committee, will:
    A. Organize, staff and equip area fire and rescue dispatch centers in accordance with the principles enumerated in the California Fire Service and Rescue Emergency Mutual Aid Plan.
    B. Aid and encourage the development of uniform fire and rescue operational plans within the area.
    C. Aid and encourage the development of countywide fire and rescue communication nets operating on the approved fire frequencies for the county.
    D. Maintain an up-to date inventory system on fire and rescue apparatus and personnel within the area for use in dispatching. Compile and forward this information to the respective Regional Fire and Rescue Coordinator annually.
    E. Develop a dispatching procedure for all state-owned OES fire apparatus, rescue truck, communication vehicles and other specialized resources assigned within the area.
    F. Provide fire and rescue coordination to the County OES Operational Area Disaster Preparedness Official.
    G. Responsible to aid and assist local, region and state officials in planning, requesting, and utilizing mobilization centers as needed for staging strike teams and personnel where appropriate.
3. During a “State of War Emergency”, shall report to the Area Emergency Operations Center to serve on the staff of the Operational Area Disaster Preparedness Director. If necessary, an authorized representative may serve on this staff in place of the Operational Area Fire and Rescue Coordinator.
4. During a “State of Emergency” declared by the Governor, or as may be necessary, shall report to the Area Emergency Operations Center or such other location as directed by the Regional Fire and Rescue Coordinator. If necessary, an authorized representative may assume this duty.

5. Will be responsible for coordination of all fire and rescue resources within the operational area on major mutual aid operations.

    A. If the emergency is within the jurisdiction of the Operational Area Fire and Rescue Coordinator and the emergency overloads the communication facilities, the Operational Area Fire and Rescue Coordinator may assign dispatching of mutual aid equipment to an alternate fire and rescue dispatch center.

    B. Shall keep the Regional Fire and Rescue Coordinator informed of all operations.

    C. Evaluates requests for assistance from local agency and determines the resources from that operational area which can provide the most timely assistance and initiates appropriate response thereof. Determines if the timeliest assistance is from one adjacent operational area and if so, requests assistance from that Operational Area Fire and Rescue Coordinator not to exceed five engine companies or individual resources, and notifies the Regional Fire and Rescue Coordinator of this action. When resources are needed from more than one adjacent area, either for timely responses or when the need is beyond the operational area capability, the request must be made to the region.

    D. Determines approximate time commitment and justification of resources issued to local agency, and length of time it will utilize these resources. Periodically evaluates the justification and commitment to the local agency of these resources and notifies the region.

    E. The Operational Area Fire and Rescue Coordinator will advise the requesting jurisdiction of the origin of resources responding to the request for assistance.

    F. Shall notify and advise the Regional Fire and Rescue Coordinator, in a timely manner, of the need to establish mobilization centers and/or staging areas.

6. The Operational Area Fire and Rescue Coordinator is not responsible for any direct fire or other emergency operations accept those which occur with the jurisdiction of its own department, agency, etc. The local official in whose jurisdiction the emergency exists shall remain in full charge of all fire and rescue resources, staffing, and equipment furnished for mutual aid operations.

7. The Operational Area Fire and Rescue Coordinator along with the Office of Emergency Services, is responsible for the update of this annex every four years.

8. Keeps the Zone Coordinators informed of resource status within the Operational Area.

Responsibilities of the Regional Fire and Rescue Coordinator

1. Organizes and acts as chairperson of the Regional Fire and Rescue Coordinating Committee, composed of Alternate Regional Fire and Rescue Coordinators and the

Operational Area Fire and Rescue Coordinators within the region. This committee may include others as deemed necessary by the chairperson. This committee shall meet at least once a year and may hold additional meetings as deemed necessary by the chairperson.

2. On receipt of information of an emergency within the region, this may require regional mutual aid, or upon request of the State Fire and Rescue Coordinator, shall assume responsibility for coordination and dispatch of regional mutual aid resources.
3. In cooperation with the Fire and Rescue Coordinating Committee shall:
    A. Organize, staff, and equip a Regional Fire and Rescue dispatch center in accordance with the principles enumerated in the California Fire Service and Rescue Emergency Mutual Aid Plan.
    B. Select and submit to the State Fire and Rescue Coordinator, the names of individuals to serve as its alternates at the Regional Fire and Rescue dispatch centers.
    C. Aid and encourage the development of uniform fire and rescue emergency plans within the region, through the Operational Area Fire and Rescue Coordinators.
    D. Aid and encourage the development of countywide fire and rescue communication nets, tying CAL FIRE departments to an Operational Area Fire and Rescue dispatch center.
    E. Maintain an up-to-date inventory system of fire and rescue apparatus and personnel within the region for use in dispatching. Compile and forward this information to the State Fire and Rescue Coordinator annually.
4. During a "State of War Emergency", the Regional Fire and Rescue Coordinator or the authorized representatives shall report to the Regional Emergency Control Center, acting as Fire and Rescue liaison to the OES Regional Manager.
5. During a "State of Emergency" proclaimed by the Governor, or as may be necessary, the Regional Fire and Rescue Coordinator or the alternate will report to the Regional Emergency Control Center or other locations as directed by the State Fire and Rescue Coordinator.
6. Is responsible for dispatching all Cal EMA and/or CAL FIRE and rescue resources within the region on major mutual aid operations.
    A. If the emergency exists within the jurisdiction of the Regional Fire and Rescue Coordinator and overloads the communication facilities, the Regional Fire and Rescue Coordinator may assign dispatching of mutual aid equipment to an Alternate Regional Fire and Rescue dispatch center.
    B. Keeps the State Fire and Rescue Coordinator informed of all operations within the region.
    C. Evaluates requests for assistance from area and determines the region resources from that region which can provide the most timely assistance, and initiates appropriate response thereof. Determines if the timeliest assistance is from an adjacent region and if so, requests assistance from

that Region Fire and Rescue Coordinator (not to exceed five engines or individual resources), and must notify the State Fire and Rescue Coordinator of this action. When resources are needed from more than one adjacent region, either for timely response or when the need is beyond region capability, the request must be made to the State.

D. Needs to request approximate time commitment and justification of resources issued to operational area, and length of time it will utilize these resources. Shall periodically evaluate the justification and commitment to the Operational Area of these resources, and notify the State.

E. The Regional Fire and Rescue Coordinator will advise the requesting Area of the source of all assistance responding to the Area.

F. Shall notify and advise the State Fire and Rescue Coordinator, in a timely manner, of the need to establish mobilization centers and/or staging areas.

7. Regional Fire and Rescue Coordinator will monitor and coordinate backup coverage within an area or region when there is a shortage of resources.
8. Calls and conducts elections within the respective Operational Areas for Operational Area Fire and Rescue Coordinator. These elections will be held every three years and when a vacancy occurs or at the request of the State Fire and Rescue Coordinator. Communications and dispatch requirements will be considered in electing coordinators.
9. The Regional Fire and Rescue Coordinator is not responsible for any direct fire or other emergency operations except those, which occur within the jurisdiction of its own department, agency, etc. The local official in whose jurisdiction the emergency exists shall remain in full charge of all fire and rescue resources furnished for mutual aid operations.
10. Responsible to aid and assist in planning, utilizing, and requesting mobilization centers as needed for staging strike teams during mutual aid operations.

Responsibilities of the Chief, State Fire and Rescue Coordinator

1. The Office of Emergency Services, Fire and Rescue Division:

A. Prepares, maintains, and distributes the basic California Fire Service and Rescue Emergency Mutual Aid Plan for coordinating statewide emergency fire and rescue resources which include, but are not limited to, all regularly established fire and rescue services within the state.

B. Develops and maintains a "Fire and Rescue Emergency Operations Plan" and "Standard Operating Procedure" for the use and dispatch of OES Fire and Rescue personnel, apparatus and other fire and rescue resources as necessary. Such plans shall be made available to appropriate levels of command; i.e., Operational Area and Region Fire and Rescue Coordinators, dispatch centers, and CAL FIRE and rescue officials.

C. Organizes, staffs, and equips the State Fire and Rescue dispatch center and alternate facilities necessary to ensure effective statewide coordination and control of mutual aid fire and rescue operations.

D. Monitors ongoing emergency situations, anticipates needs, and prepares for use of inter-regional fire and rescue mutual aid resources, establishing priorities and authorizing dispatch.

E. State Fire and Rescue Coordinator will monitor and coordinate backup coverage between regions when there is a shortage of resources.

F. Consults with and keeps the Director of the Office of Emergency Services informed on all matters pertaining to the fire and rescue services, and through the State Fire and Rescue Coordinator, keeps the California Emergency Council informed of current policy matters and proposed revisions in the California Fire Service and Rescue Emergency Mutual Aid Plan.

G. Consults with and assists federal and other state agency representatives on all matters of mutual interest to the fire and rescue service.

H. Coordinates fire and rescue emergency mutual aid operations throughout the state, both on and off scene.

I. Assists state and CAL FIRE and rescue agencies in utilizing federal assistance programs available to them and keeps them informed of new legislation affecting these programs.

J. Assists in the coordination of the application and use of other state agency resources during a "State of Emergency" or "State of War Emergency."

K. Develops and provides training programs and materials for effective application and utilization of the California Fire Service and Rescue Emergency Mutual Aid Plan.

L. Encourages the development of training programs for specialized emergencies involving fire and rescue services; i.e., radiological monitoring, civil disturbances, staff and command training.

M. Calls for and conducts elections for Regional Fire and Rescue Coordinator. These elections will be held every three years or any time a vacancy occurs.

N. Develops procedures for reimbursement of state and local agency expenses associated with assistance rendered during a major incident.

O. Standardizes forms and procedures for the records required for response of OES and/or CAL FIRE and rescue resources responding to incidents or operational area coverage which qualify for reimbursement.

III. Concept Of Operations

System Overview

The fire and rescue mutual aid defined in this local operational plan is rendered pursuant to the California Master Mutual Aid Agreement and is based upon an incremental and progressive system of mobilization. Mobilization plans have been based upon the concept of providing a fire-rescue entity sufficient resources, without extraordinarily depleting fire and rescue defenses outside of the area of disaster. Under normal conditions, fire rescue mutual aid plans are activated in ascending order starting with local, operational area, region, and Inter-Region. In certain circumstances mobilization of significant fire and rescue forces from within the area or region of the disaster may be impractical and imprudent. Inter-regional mutual aid is, therefore, not contingent upon mobilization of uncommitted resources within the region of the disaster.

1. Rescue resources include resources available through automatic and/or day-to-day mutual aid agreements with neighboring jurisdictions. Local mobilization plans are activated by requests to participating agencies and must provide for notification of the Operational Area Fire and Rescue Coordinator upon activation. The Operational Area Fire and Rescue Coordinator shall be notified of those committed resources in order to determine resource availability for subsequent response.
2. Operational Area fire and rescue resources are resources made available to a participating agency through the approved and adopted San Diego County Mutual Aid Agreement. Mobilization of Operational Area resources are activated by the Operational Area Fire and Rescue Coordinator or designated representative, in response to a request for assistance from an authorized fire official of the participating agency in need. The Operational Area Fire and Rescue Coordinator must notify the Regional Fire and Rescue Coordinator of all area resources committed. Following are the general terms of the San Diego County Mutual Aid Agreement
    A. All mutual aid provided under this agreement will be without expectation of reimbursement for the duration of the incident so long as no out of county resources which are being reimbursed are assigned to the incident
    B. Once an out of county resource eligible for reimbursement is assigned to the incident, any mutual aid resources provided by Operational Area agencies will be eligible for reimbursement from the time of their original assignment to the incident.
3. Regional fire and rescue defense resources include all resources available to a participating agency through the approved and adopted Regional Fire and Rescue Mutual Aid Plan. Operational Area plans are significant elements of the regional plans.
4. In response to a request for assistance from an Area Fire and Rescue Coordinator, the mobilization of regional fire and rescue resources are directed by the Regional Fire and Rescue Coordinator. Regional Fire and Rescue Coordinators must notify the Chief, OES Fire and Rescue Division, of resources committed.

5. Fire and Rescue Dispatch Centers must be adequately equipped for emergency operations. They should be located in a facility which conducts 24-hour a day operations, and must be equipped to permit direct communications with all fire and rescue service agencies within their area of operations. They must be staffed with competent personnel and equipped with such maps, charts, records and operational data as are necessary to perform emergency operations. Alternate Fire and Rescue Dispatch Centers should have the same capability as primary centers, thus ensuring continued operations in the event of failure of the primary centers.

IV. Communications

System Overview

Communications at emergency incidents are managed through the use of a common communications plan and an incident-based communication center established solely for the use of command, tactical and support resources assigned to the incident. This includes incident-established radio networks, on-site telephone, public address, and off-site incident telephone/microwave/radio systems.

The control point for integrated communications in the field is Echo III, or alternate mobile communications vehicles such as the Sheriff's Mutual Aid Communications Van, regional inter-operable communications vehicles and RACES 1. Echo III is a mobile command center, which is dispatched to the incident to assign and coordinate radio frequency use, as set forth in the Incident Command System (Ref. Field Operations Guide ICS 420-1).

The communications system used by all fire agencies within the San Diego County Operational Area is described in **Annex I**.

System Capability

The current radio systems in place throughout the Operational Area are designed to provide each fire agency with a Local Communications Net, Command and Tactical Frequencies and a County Mutual Aid Command Net.

The communication units are responsible for developing plans to make the most effective use of incident-assigned communications equipment and facilities; the installation and testing of all communications equipment; supervision and operation of the Incident Communications Center; distribution and recovery of equipment assigned to incident personnel; and the maintenance and on-site repair of communications equipment.

The Field Communications Unit (Echo III) has a major responsibility for effective communications planning, due to the potential multi-agency use of ICS. This is especially important in determining required radio nets, establishing interagency frequency assignments and ensuring that maximum use is made of all assigned communications capability.

To enhance the communications system, the following fixed facilities and mobile units exist within this County:

Echo I:
This Communication Center is located at the California Department of Forestry/CAL FIRE Headquarters at Monte Vista. This is the Primary Command and Control Center for the fire mutual aid radio system within the Operational Area.

Echo III:
This is a Mobile Command Unit which is dispatched to incidents in the field to provide communications links between on scene personnel and between the scene and the dispatch center. Upon its arrival, it will be utilized as the Communications Unit for the incident. There are other communication units available throughout the county, please refer to Annex I for additional information.

V. Incident Command System

It is the intent of this plan that the Incident Command System as developed by FIRESCOPE and as adopted within the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) be utilized for the management of all emergency incidents. Qualifications required for each position within the Incident Command System structure shall be approved as follows:

- 200 level certification and lower: Authority having Jurisdiction chief/administrator
- 300 level certifications: California Incident Command System Committee (CICCS),
- San Diego County Operational Area
- 400 level certifications: Region

Agencies are reminded that personnel must be properly certified and qualified to perform in the various ICS positions.

VI. Regional Urban Search And Rescue

Urban Search and Rescue involves the location, rescue (extrication), and initial medical stabilization of victims trapped. Urban Search and Rescue is considered a “multi-hazard” discipline, as it may be needed for a variety of emergencies or disasters including earthquakes, hurricanes, typhoons, storms and tornadoes, floods, dam failures, technological accidents, terrorist activities, and hazardous materials releases. The Urban Search and Rescue Task Forces are FEMA assets and are ordered through the Mutual Aid Process. Go to the FEMA website for specific information on US&R resources.

VII. Swiftwater Rescue Teams

Swiftwater Rescue Teams involve the location; rescue (extrication) and initial medical stabilization of victims trapped in swift moving and floodwater conditions. The teams are staffed, trained, and equipped following NIMS and FIRESCOPE standards.

The teams in San Diego County can be mobilized for operations anywhere in the County. Each Zone coordinator will maintain a current list of Swiftwater/Flood Rescue resources and will make the list available to the Operational Area Fire Coordinator.

If a team is needed and the requesting agency does not have their own team, the request is made to the Zone Coordinator through the zone dispatch center who will supply teams if the Zone's teams are available. If the team is not available within the zone, the request goes to the Area Fire Coordinator who will attempt to fill the request within the Operational Area. If nothing is available within the area, the request will be forwarded to the State Office of Emergency Services through the normal statewide mutual-aid system. OES/Cal EMA has availability of additional Swift Water Flood Rescue teams and other regional resources throughout the state. For specific details regarding available resources, alert status, and current contact information for teams and technical specialists, **see Appendix II.**

VIII. Metropolitan Medical Strike Team

The Metropolitan Medical Strike Team (MMST) responds to acts of Nuclear, Biological and Chemical (NBC) terrorism. The team consists of medical, fire service, law enforcement and public health personnel in addition to environmental and hazardous materials specialists. They are trained and outfitted to perform field level response efforts for the consequences of the terrorist use of weapons of mass destruction. This team forms the technical nucleus of a comprehensive response capability to NBC terrorism. It includes specialized personnel to direct and coordinate immediate response, mitigation and recovery operations at the incident scene.
The MMST can be activated by the Incident Commander through the Sheriff's Communications Center. **Refer to Annex D for details.**

IX. San Diego County Firefighting Air Resources Programs

Within San Diego County aerial firefighting resources are provided by CAL FIRE fixed wing and tactical aircraft, the San Diego County Sheriffs Department Type II and III helicopters, the City of San Diego Type II helicopters, the USFS Type II helicopter, and, through MOU's with CAL FIRE, the Navy and USMC have Type I helicopters. Periodically, additional air resources become available for use by OP Area agencies (e.g.; SDG&E Type 1). For numbers of resources, types and aircraft descriptions, **see Appendix III.**

X. San Diego County Rescue Helicopter Resources

Within San Diego County, aerial rescue helicopters are provided by: San Diego Sheriff in cooperation with CAL FIRE operates Type II with hoist (BLS), San Diego City has Type II with hoist (ALS), and USCG has Type I with hoist (BLS). For number of resources, types and description of ability, **see Appendix IV.**

XI. Community Emergency Response Teams (Cert)

Community Emergency Response Teams (CERT) in San Diego County are trained to be able to augment fire personnel in the time of a disaster within their communities. Each program is community based and sponsored by a local Public Safety Agency within their jurisdiction. Each CERT program will respond within the scope of their training at the direction of their sponsoring agency. CERT members are identified by green vests and are registered members of the Disaster Service Worker Program. For additional information please **see Appendix V.**

XII. Technical Rescue Resources

The technical rescue resources consist of, Mass Casualty Units, Confined Space Units, Trench Rescue Units, Heavy Rescue Units and Rope Rescue. These units are staffed by firefighters and stationed throughout the county. Resources should be requested through the local dispatch center. For resource type, location, and unit designator, **see Appendix VI.**

XIII. Hazardous Material Response Reources

The San Diego County Operational Area Hazardous Materials Area Plan (Area Plan) describes the system currently in place in San Diego County for managing hazardous materials emergencies. The San Diego County Department of Environmental Health (DEH), Hazardous Materials Division (HMD) is the administering agency for the Area Plan.

The activities carried out by the HMD, Hazardous Materials Incident Response Team (HIRT), and the San Diego County Office of Emergency Services (OES) to effectively manage hazardous materials emergencies are coordinated, in part, through the Area Plan. The Area Plan is designed to integrate the operational activities of San Diego County's Emergency Services Organization, Hazardous Incident Response Team (HIRT) into the on-scene operational procedures for the local, State or Federal agency who have primary responsibility for a hazardous chemical emergency in the jurisdiction. For Area Plan, **see Appendix VII.**

XIV. Other Resources

It is recognized that fire agencies have support resources that are unique and although they do not belong in the other categories, identifying them will allow fire rescue agencies to be aware of

assets within the region that can support their incidents. A couple of examples of resources to be found in this section include Rehabilitation Units and support equipment. For a list of resources, please **see Appendix VIII.**

APPENDIX I

Fire Mutual Aid Zones And Dispatch For County-Wide Fire Radio Network System

*800 MHz | #VHF

NORTH ZONE	Dispatched By
North County Dispatch JPA	Self *
Rancho Santa Fe Fire Protection District	North County JPA *
Deluz Volunteer Fire Department	CAL FIRE *
Camp Pendleton Fire Department	Self
City of Carlsbad Fire Department	North County JPA *
City of Del Mar Fire Department	North County JPA *
City of Encinitas Fire Department	North County JPA *
City of Escondido/Rincon Del Diablo Municipal Water District	Self *
City of Oceanside Fire Department	North County JPA *
City of San Marcos Fire Dept. /San Marcos Fire Protection District	North County JPA *
City of Solana Beach Fire Department	North County JPA *
City of Vista Fire Department/Vista Fire Protection District	North County JPA *
Deer Springs Fire Protection District (CAL FIRE)	CAL FIRE *
Elfin Forest Volunteer Fire Department (County Service Area 107)	North County JPA *
North County Fire Protection District	North County JPA *
San Onofre Fire Department (Private)	Self *
Palomar Mountain Volunteer Fire Dept (County Service Area 110)	CAL FIRE *
Valley Center Fire Protection District (CAL FIRE)	CAL FIRE *
San Pasqual Reservation Fire Department	CAL FIRE *
Rincon Reservation Fire Department	CAL FIRE *
Pala Indian Reservation Fire Department	CAL FIRE *
North County Reservation Fire District	CAL FIRE *

METROPOLITAN ZONE	Dispatched By
City of San Diego Fire-Rescue Department	Self *
City of Poway Fire Department	San Diego Fire Rescue *
Miramar Fire Department	Self
Federal Fire Department	Self
City of Coronado Fire Department	Heartland Fire JPA *
City of Imperial Beach Fire Department	Heartland Fire JPA *
Lower Sweetwater Fire Protection District (NCFD)	Heartland Fire JPA *
City of National City Fire Department	Heartland Fire JPA *
City of Chula Vista Fire Department	San Diego Fire-Rescue *
San Pasqual Volunteer Fire Dept. (County Service Area 113)	San Diego Fire-Rescue *

CENTRAL ZONE	Dispatched By
Heartland Fire Communications (JPA)	Self
Alpine Fire Protection District	Heartland Fire JPA *
Barona Fire Protection District	Heartland Fire JPA *
Bonita-Sunnyside Fire Protection District	Heartland Fire JPA *
East County Fire Protection District	Heartland Fire JPA *
City of El Cajon Fire Department	Heartland Fire JPA *
Lakeside Fire Protection District	Heartland Fire JPA *
City of La Mesa Fire Department	Heartland Fire JPA *
City of Lemon Grove Fire Department	Heartland Fire JPA *
San Miguel Consolidated Fire Protection District	Heartland Fire JPA *
City of Santee Fire Department	Heartland Fire JPA *
Viejas Fire Department	Heartland Fire JPA *
Sycuan Reservation Fire Department	CAL FIRE *

NO ZONE AFFILATION	Dispatched By
California Department of Forestry and Fire Protection (CAL FIRE)	CAL FIRE #
United States Forest Service (USFS)	USFS #

EAST ZONE	Dispatched By
Rural Fire Protection District (CAL FIRE)	CAL FIRE *
Borrego Springs Fire Protection District	CAL FIRE *
Boulevard Volunteer Fire Department (County Service Area 111)	CAL FIRE *
Campo Volunteer Fire Department (County Service Area 112)	CAL FIRE *
Intermountain Volunteer Fire and Rescue Department	CAL FIRE *
Julian-Cuyamaca Fire Protection District	CAL FIRE *
Mt. Laguna Volunteer Fire Department (County Service Area 109)	CAL FIRE *
Ocotillo Wells Volunteer Fire Department	CAL FIRE *
Pine Valley Fire Protection District	CAL FIRE *
Ranchita Volunteer Fire and Rescue Department	CAL FIRE *
Shelter Valley Volunteer Fire Department	CAL FIRE *
Sunshine Summit Volunteer Fire Department	CAL FIRE *
Warner Springs Volunteer Fire Department	CAL FIRE *
Ramona Municipal Water District (CAL FIRE)	CAL FIRE *
Campo Indian Reservation Fire Department	CAL FIRE *
Mesa Grande Indian Reservation Fire Department	CAL FIRE *

NOTE: Federal installations may be included in any of the above zone

County of San Diego Mutual Aid Zones

Policy for Changing Zones

1. There are four (4) Fire Mutual Aid Zones in San Diego County
    - North Zone
    - Metro Zone
    - Central Zone
    - East Zone

2. Procedure for Managing Zone Changes:
    A. The Operational Area Zone Coordination Group will be the formal committee that will review and make final decisions on changes within the respective zones.

    The committee will consist of the following members:

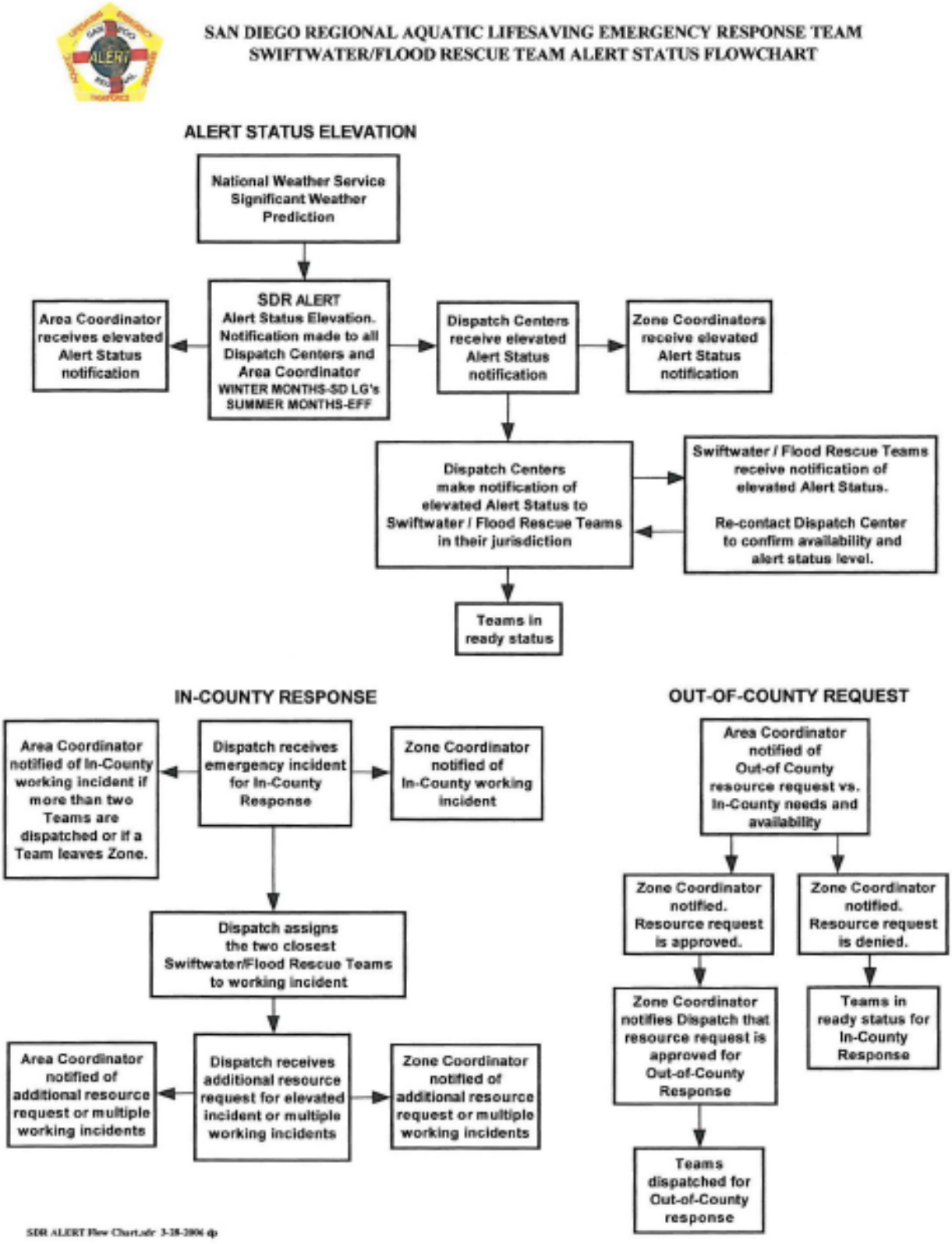
    - Operational Area Coordinator (Spokesperson)
    - Alternate Area Coordinator(s)
    - North Zone Coordinator
    - Metro Zone Coordinator
    - Central Zone Coordinator
    - East Zone Coordinator

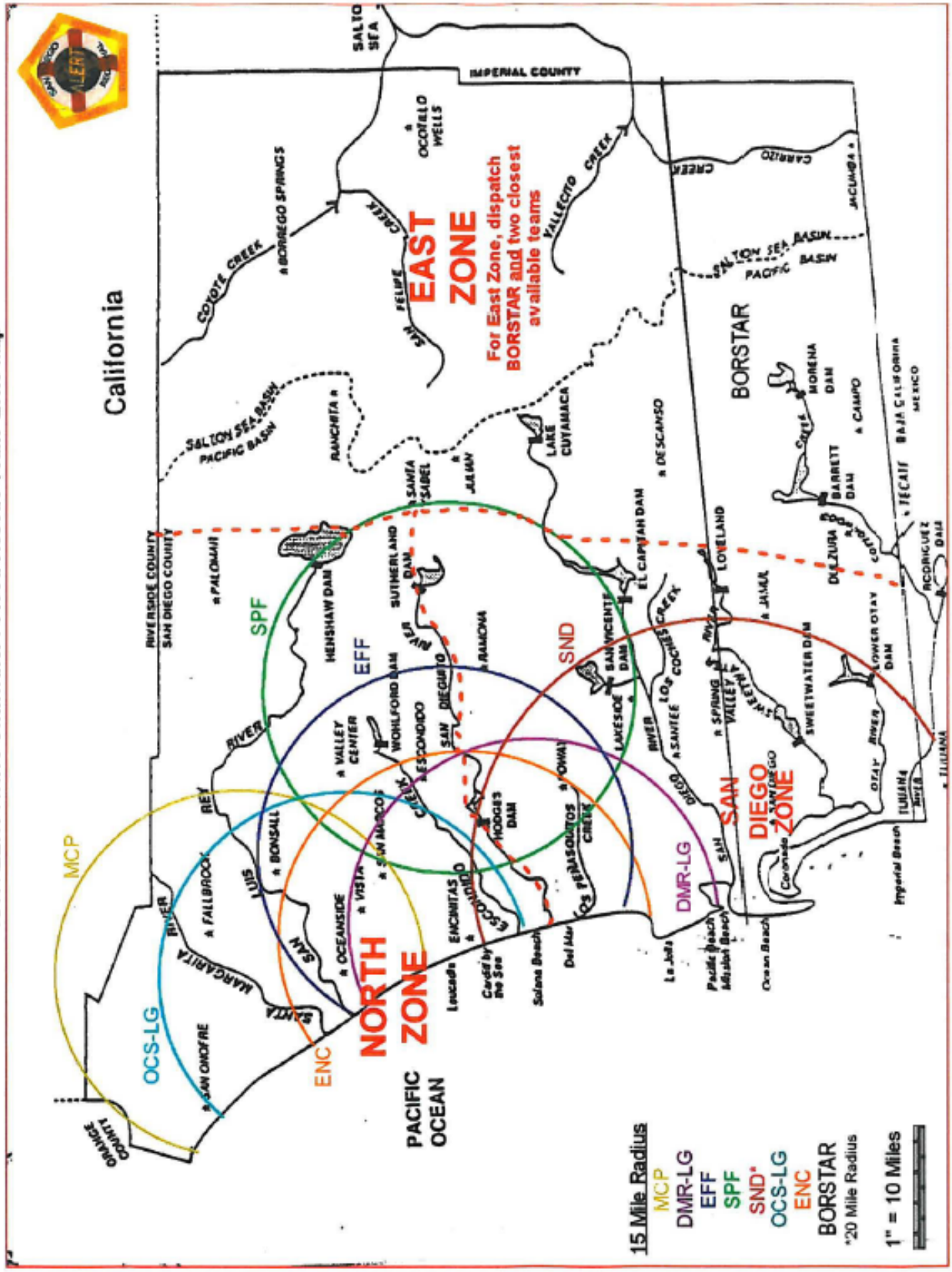
    B. Group Responsibilities:

    - Receive requests and resolve issues that may arise within the respective zones (zone changes, resource changes, etc.)
    - The Coordination Group will review and weigh the operational merits of the request(s)
    - The Coordination Group will vote to approve or disapprove the request
    - The Coordination Group's decision is final
    - Once a decision is made by the Group, the Operational Area Coordinator (or Alternate Coordinator if in the O/C position) will respond in writing to the requesting agency(s) and copy all Operational Area Coordination Group Agencies

APPENDIX II

Swiftwater Rescue Resources




SDR ALERT Active Swiftwater / Flood Rescue Team Zone Map
California
IMPERIAL COUNTY
EAST ZONE
For East Zone, dispatch BORSTAR and two closest available teams
NORTH ZONE
SAN DIEGO ZONE
BORSTAR
PACIFIC OCEAN
MCP
OCS-LG
ENC
SPF
EFF
SND
DMR-LG
15 Mile Radius
MCP
DMR-LG
EFF
SPF
SND*
OCS-LG
ENC
BORSTAR
*20 Mile Radius
1" = 10 Miles

SAN DIEGO REGIONAL AQUATIC LIFESAVING EMERGENCY RESPONSE TEAM
Swiftwater/Flood Rescue Team Alert Procedures

The following procedures were developed to enhance the area-wide readiness and use of existing Swiftwater/Flood Rescue Teams. While individual agency operations may vary slightly in reaction to each Alert level, the criteria at each level remains the same throughout the Operational Area.

ALERT I

Criteria: Rainfall predictions:

COAST	FOOTHILL	MOUNTAIN
½" – 1"	1" – 1½"	1½" +

Incidents involving persons or vehicles attempting to cross moving water within the County are possible.

Response: Designated vehicles are equipped for Swiftwater Rescue (SR) conditions. Trained personnel are available 24 hours a day, and additional team members may be on call. *Once availability is determined, contact YOUR fire dispatch agency with info.*

ALERT II

Criteria: Rainfall predictions:

COAST	FOOTHILL	MOUNTAIN
1" – 2"	2" – 3"	3" +

SR incidents within the County are likely.

Response: Designated vehicles are equipped for SR conditions and available for emergency response. Trained personnel are assigned to shifts, additional team members are available for immediate recall. *Once availability is determined, contact YOUR fire dispatch agency with info.*

ALERT III

Criteria: Rainfall predictions:

COAST	FOOTHILL	MOUNTAIN
2" – 3"	3" – 4"	4" +

Heavy rain conditions are prevalent, and SR incidents within the County are imminent.

Response: All available SR trained members are assigned to equipment. All equipment is available for immediate response. In some cases, equipment and teams are strategically deployed in advance of an incident. *Once availability is determined, contact YOUR fire dispatch agency with info.*

NOTE: When a Dispatch Center is made aware of Swiftwater / Flood Rescue Teams at Alert II and Alert III levels, that agency shall then contact the Zone Coordinator and update the resource information. The Zone Coordinator shall then contact the Area Coordinator and update accordingly.

Existing conditions such as saturated ground or rivers near flood stage from previous rainfall will also be taken into consideration when determining Alert levels.

Alert Procedures Rev 3-28-06 dp

APPENDIX III

Firefighting Helicopter Resources
Aviation Assets San Diego County

Firefighting helicopters

San Diego Sheriff's Department/CAL FIRE Helicopter Program

The San Diego County Sheriff's Department Fire/Rescue Helicopter Program is capable of responding two Type II firefighting and multi-mission-capable helicopters. These helicopters are known as County Copters 10 and 12 (Super 205 A++). These helicopters are dedicated, local controlled regional resources and are available to all public safety agencies in San Diego County. At least one of these aircraft are staffed with a CAL FIRE Helitack Captain and Sheriff pilot year round, the second ship is also covered with a CAL FIRE Helitack Captain and Sheriffs Pilot during periods of increased fire danger, typically June through November as dictated by weather conditions.

During peak fire season one aircraft will be staffed with an eight person Helitack crew. Their goal is to rapidly contain hot spots ahead of the main ground attack while being supported by helicopter drops. The crew usually consists of a Helitack Captain acting as the crew leader with five to six Firefighters.

When requested, the helicopters will provide an immediate initial attack response for wildland fires, air-supported emergency services, search and rescue missions, technical rescue operations and transportation and deployment of emergency service personnel and associated equipment within San Diego County currently during daylight hours only

Aircraft Fleet

Specifications:

Cruise Speed:	125 mph
Gallon Capacity:	360 plus
	324/bucket

Manufacture
Bell Helicopters, Fort Worth, Texas

Crew
Pilot, Co-pilot, and nine Firefighters

Mission
The Bell 205 is the civilian version of the UH-1H that CAL FIRE uses for its helicopter fleet. Their missions are identical. In San Diego County, CAL FIRE jointly staffs a Bell 205-A1++ with the sheriff's department. The 205-A1++ has an improved rotor system and more powerful engine than the original 205. With seating for up to 9 passengers, this aircraft can be used for initial-attack fire missions as well as crew transport. A tank can be equipped on the belly of the aircraft that can hold 375 gallons.

Specifications:

Cruise Speed:	152 mph
Gallon Capacity:	180

Manufacturer
Bell Helicopter

Crew
Pilot

Bell 407
The Bell 407 is one the newest additions to the Jet Ranger family. The 407 is based on the older Bell 206L-3. The aircraft has some major modifications from older models including a four bladed main rotor system, increased engine performance and slightly expanded inside cabin area. Passenger seating is the same as the Bell Long Ranger, providing seating for a total of six passengers excluding the pilot. As with most light helicopters, they have the ability to take-off and land in relatively small areas.

The Bell 407 can be used for a variety of activities including aerial reconnaissance and aerial ignition. For wildland fire use, it is becoming the light helicopter of choice at many bases. The helicopter's increased speed, lifting capability and improved density altitude performance makes this helicopter ideal for wildland fire initial attack.

Specifications:

Cruise Speed: 144 mph

Gallon Capacity: 120

Manufacturer

Hughes Helicopters / McDonnell Douglas

Crew

Pilot

MD 500D

The 500D was originally manufactured by Hughes Helicopters, which is now owned by McDonnell Douglas Corporation. The civilian Model 500 is a direct descendent of the U.S. Army's OH-6A, originally designed as an observation helicopter during the Vietnam conflict. The egg shape design provided excellent crash survival characteristics. The 500 model is very maneuverable. They are used for a variety of activities such as aerial reconnaissance, aerial ignition, and wildland fire suppression.

There are several unique features of this aircraft. The engine exhaust pipe is directly under the tailboom. Seating in the 500D is extremely cramped. There are three seats in the back, but they can actually accommodate only two. Front seat passenger sits on the right side instead of the left.

San Diego Fire-Rescue

The San Diego City Fire-Rescue Department Air Operations Division is capable of responding two Type II firefighting and multi-mission-capable helicopters from July through December and one Type II from January through June. These helicopters are known as City Copter 1 (Bell 212) and City Copter 2 (Bell 412). They are available for both day and night operations. These helicopters are a dedicated, locally controlled regional resource and are available to all public safety agencies in San Diego County.

When requested, the helicopter will provide an immediate initial attack response for wildland fires, air-supported emergency services, search and rescue missions, technical rescue operations and transportation and deployment of emergency service personnel and associated equipment within San Diego County. Both aircraft are FAA approved for night-vision-goggle (NVG) operations.

Aircraft Fleet

Specifications:

Cruise Speed: 140 mph

Gallon Capacity: 360

Manufacturer
Bell Helicopter

Crew
Pilot and Co-pilot

Bell 412

The Bell 412 was developed in the late 1970s and is essentially a Bell 212 with a four bladed rotor system. It can perform slightly better than the 212 at higher altitudes. This aircraft can also carry passengers, cargo, and do long line work. Many local fire departments use the Bell 412 for fire suppression. The Bell 412 can have a large tank mounted on the bottom or can carry a bucket.

Bell 212

The Bell 212 was introduced by Bell Helicopter in 1968. The 212 aircraft is used for passenger transport and cargo movement, both internal and external. This aircraft has twin engines and two rotor blades. The 212 is one of the most popular Type 2 helicopter on the national call-when-needed helicopter contract. The Bell 212 is the civilian version of the UH-1N "Twin Huey". Many local fire departments use the Bell 212.

United States Forest Service

The Cleveland National Forest is capable of responding one Type II Helicopter out of the Ramona Air Attack Base. This aircraft is known as Copter 538 and is under contact from June 1st until November 30th. When requested, the helicopters will provide an immediate initial attack response for wildland fires during daylight hours only. This aircraft is available on a National response basis and controlled by the United States Forest Service.

This aircraft will be staffed with an eight person Helitack crew. Their goal is to rapidly contain hot spots ahead of the main ground attack while being supported by helicopter drops. The crew usually consists of a Helitack Captain acting as the crew leader with five to six Firefighters.

Aircraft Fleet

Specifications:

Cruise Speed: 115 mph

Gallon Capacity: 360

Manufacturer
Bell Helicopter

Crew
Pilot and Co-pilot

Bell 212
The Bell 212 was introduced by Bell Helicopter in 1968. The 212 aircraft is used for passenger transport and cargo movement, both internal and external. This aircraft has twin engines and two rotor blades. The 212 is one of the most popular Type 2 helicopter on the national call-when-needed helicopter contract. The Bell 212 is the civilian version of the UH-1N "Twin Huey". Many local fire departments use the Bell 212.

CAL FIRE

The CAL FIRE San Diego Unit Aviation Program has the ability to respond two Type III Grumman S-2T Air tankers and one North American OV-10A Air Tactical aircraft. These aircraft are permanently stationed at the Ramona Interagency Air Attack Base. An equal number of aircraft are stationed in Hemet, California approximately 12 air miles North of the San Diego County line. The S2T is capable of dropping 1200 Gallons of Long Term fire retardant. The OV-10A is utilized as a command and control aircraft, coordinating the air space over an emergency incident.

Aircraft Fleet

OV-10A "Bronco"
Air Tactical Aircraft

Specifications:

Cruise Speed: 258 mph

Gallon Capacity: not applicable

Manufacturer
North American-Rockwell, Columbus, Ohio.

Crew
Pilot and Air Tactical Group Supervisor

Original Owner
U.S. Navy/Marines, 1968-1993. The OV-10A was used as a counter-insurgency (military intelligence) aircraft and close air-support to military ground forces.

Acquired by CAL FIRE
In 1993, CAL FIRE acquired 16 OV-10As from the Department of Defense. Fourteen of those have been converted and are available for use as air attack planes. The OV-10s replaced the original cessna 0-2As that CAL FIRE had been using for air attack. The OV-10s are newer, larger, and faster, provide a larger field of vision for the crew and are more maneuverable than the older O-2As.

Mission
CAL FIRE uses OV-10As as aerial command and control of aircraft on wildland fires. The crew provides tactical coordination with the incident commander on the ground, providing information on the movement and spread of the fire. The OV- 10A crew then directs CAL FIRE's airtanker and helicopter pilots where to make their retardant and water drops.

Grumman S-2T
Type III Airtanker

Specifications:

Cruise Speed: 305 mph

Gallon Capacity: 1,200

Manufacturer
Grumman Aerospace, Bethpage, New York

Crew
Pilot

Original Owner
U.S. Navy, 1954-1972. The S-2E/G was used as a carrier-based anti-submarine warfare airplane.

Acquired by CAL FIRE
In 1996, CAL FIRE acquired 26 S-2E/G planes from the Department of Defense. CAL FIRE had the aircraft converted for fire-fighting configuration and fitting them with modern, powerful turboprop engines. The completely reconditioned S-2Ts are faster, safer, and more maneuverable. They can carry a larger retardant payload than the older S-2A air tanker CAL FIRE utilized since the 1970's. The S-2T air tanker is part of CAL FIRE's air program modernization efforts that will result in the safest and most efficient mix of aircraft to carry out the fire fighting mission. CAL FIRE currently has 23 S-2Ts that are utilized statewide.

Mission
CAL FIRE utilizes the S-2T air tankers for fast initial attack delivery of fire retardant on wildland fires.

United States Navy

CAL FIRE and the United States Navy share an operational agreement that allows CAL FIRE San Diego Unit to access Navy resources during a time of local disaster. This agreement is part of the Federal Defense Support to Civilian Authorities or DSCA process. Both United States Navy and United State Marine Corp have signed operational agreements with CAL FIRE. CAL FIRE San Diego Operational Unit. The CAL FIRE San Diego Unit Chief in coordination with the County Fire/Rescue Coordinator has the ability to request assistance from the United States Navy Region Southwest.

Aircraft Fleet

Navy UH-60 Seahawk

Specifications:
Cruise Speed: 183 mph
Gallon Capacity: 780/bucket

Manufacturer
Sikorsky Aircraft Corp

Crew
Pilot, Co-pilot and a Military Helicopter Manager

The UH-60 was originally designed for the U.S. Army in the 1970s as a light transport helicopter, air assault and a military medievac helicopter. The aircraft is a four bladed, twin engine helicopter. The popular UH-60 has a civilian version called a S-70 "Firehawk". Today CAL FIRE and other fire agencies train with members of the California and Nevada National Guard to use their aircraft as surge capacity during major wildfire events.

United States Marine Corp

CAL FIRE and the United States Marine Corp share an operational agreement that allows CAL FIRE San Diego Unit to access USMC resources during a time of local disaster. This agreement is part of the Federal Defense Support to Civilian Authorities or DSCA process. Both United States Navy and United States Marine Corp have signed operational agreements with CAL FIRE. CAL FIRE San Diego Operational Unit. The CAL FIRE San Diego Unit Chief in coordination with the County Fire/Rescue Coordinator has the ability to request assistance from the United States Marine Corp Installations West or MCI West.

Aircraft Fleet

Boeing CH-46 "Sea Knight"
Military Helicopter

Specifications:

Cruise Speed: 140 mph

Gallon Capacity: 224/bucket

Manufacturer
Boeing Company /
Vertol Aircraft Company

Crew
Pilot , Co-pilot and
a Military Helicopter Manager

Boeing CH-46 "Sea Knight"

The Boeing CH-46, known as the "Sea Knight", is the military version of the Boeing-Vertol 107. The CH-46 was designed in the late 50s for the U.S. Marine Corps to be a medium-lift helicopter, and is primarily used to transport cargo. The aircraft is able to provide all-weather, day-or-night assault transport of combat troops, supplies and equipment. Assault Support is its primary function, and the movement of supplies and equipment is secondary. Additional tasks include combat support, search and rescue, support for forward refueling and rearming points. The CH-46 and the CH-47 are most recognizable by their tandem rotors.

CH-53E "Super Stallion"
United States Marine Firefighting Aircraft

Specifications:

Cruise Speed: 173 mph

Gallon Capacity: 2,000/bucket

Manufacturer
Sikorsky Aircraft Corp.

Crew
Pilot , Co-pilot and
a Military Helicopter Manager

Sikorsky CH-53E "Super Stallion" (Sikorsky S-80E)

The Sikorsky CH-53E, known as the Super Stallion, is the largest and heaviest helicopter used by the U.S. Marine Corps and Navy. It is one of the few helicopters in the world that uses three turbine engines and can be refueled in flight. The aircraft is used to transport personnel and equipment, and lift heavy loads. The CH53E is capable of lifting 16 tons, transporting the load 50 miles and then returning. The aircraft is a shipboard helicopter configured especially for caring cargo back and forth from military ships. The CH-53E is designated the model S-80 by Sikorsky. During major firestorms, the CH-53E can be used to augment CALFIRE's own air fleet for fire suppression.

APPENDIX IV

Rescue Helicopter Resources

Aerial Rescue Resources

Three agencies that have an Aerial Rescue capability in the San Diego Region:

A. San Diego Sheriff's Department/CAL FIRE - When requested, the helicopters will provide an immediate air-supported emergency services, search and rescue missions, technical rescue operations and transportation and deployment of emergency service personnel and associated equipment within San Diego County during daylight hours only.

B. San Diego Fire-Rescue Department - When requested, the helicopter provides an immediate initial attack response for wildland fires, air-supported emergency services, search and rescue missions, technical rescue operations and transportation and deployment of emergency service personnel and associated equipment within San Diego County. Both aircraft are FAA approved for night-vision-goggle (NVG) operations. Both aircraft have Advanced Life Support capabilities.

C. United States Coast Guard - Has three MH-60T helicopters. They have surface search/weather radar. Aircraft have Forward Looking Infrared (FLIR) and a high powered searchlight. Aircraft are available for alert launch however their area of expertise is over water operations. If assistance is needed, especially at night over land. A thorough risk assessment will be done before accepting the mission. Mission acceptance is dependant upon current SAR missions being performed by available aircraft.

San Diego Fire-Rescue

2 Type II Helicopter Hoist Capable (ALS) Day or Night

San Diego Sheriff/CAL FIRE

1 Type II Helicopter Hoist Rescue Capable (BLS) Daytime Only

United States Coast Guard

Three Type I Helicopters. Hoist Rescue Capable (BLS) Day or Night. Land or over water rescue capable.

APPENDIX V

Community Emergency Response Teams

Each CERT Team is uniquely trained by their host fire agency. To order these resources or obtain specific capability information, contact the sponsoring fire agency.

CERT PROGRAM	SPONSORING FIRE AGENCY
1. Alpine	Alpine FPD
2. Borrego Springs	Borrego Springs FPD
3. Carlsbad	Carlsbad FD
4. Chula Vista	Chula Vista FD
5. City of San Diego	San Diego Fire-Rescue
6. Coronado	Coronado FD
7. De Luz	De Luz Heights VFD
8. Deer Springs	Cal Fire
9. Del Mar	Del Mar FD
10. East County (Cities of El Cajon, Lemon Grove, Santee, La Mesa)	El Cajon FD – LEAD AGENCY Lemon Grove FD, Santee FD, La Mesa FD
11. Elfin Forest/ Harmony Grove	Elfin Forest/Harmony Grove VFD
12. Encinitas	Encinitas FD
13. Escondido	Escondido FD
14. Imperial Beach	Imperial Beach FD
15. Julian/ Cuyamaca	Julian-Cuyamaca FPD
16. Lakeside	Lakeside FPD
17. Mountain Empire	Campo Fire-Rescue
National City	*NO CURRENT PROGRAM*
18. North County	North County FPD
19. Oceanside	Oceanside FD
20. Palomar Mountain	Palomar Mountain VFD
21. Pine Valley	Cal Fire
22. Poway	Poway FD
23. Ramona	Cal Fire
24. Rancho Santa Fe	Rancho Santa Fe FPD
25. Rural	Cal Fire
26. San Marcos	San Marcos FPD
27. San Miguel	San Miguel FPD
28. Solana Beach	Solana Beach FD
29. Valley Center	Cal Fire
30. Vista	Vista FD

APPENDIX VI

Technical Rescue Resources

The Technical Resources for Appendix VI will be added once collected.

Appendix VII

Hazardous Material / Decon Resources

SAN DIEGO COUNTY OPERATIONAL AREA HAZARDOUS MATERIALS AREA PLAN

Introduction

The San Diego County Operational Area Hazardous Materials Area Plan (Area Plan) describes the system currently in place in San Diego County for managing hazardous materials emergencies. The Area Plan has been prepared pursuant to Division 20 Chapter 6.95 (Section 25503) of the California Health and Safety Code and in accordance with Title 19 of the California Code of Regulations. All procedures described in this plan have been implemented to include Sections 2722-2728 CCR Title 19 and are noted on the Optional Model Reporting Form. The San Diego County Department of Environmental Health (DEH), Hazardous Materials Division (HMD) is the administering agency for the Area Plan and was assisted in its preparation by the San Diego County Office of Emergency Services (OES) and the City of San Diego Fire-Rescue Department (SDFD).

The activities carried out by the HMD, Hazardous Materials Incident Response Team (HIRT), and the San Diego County Office of Emergency Services (OES) to effectively manage hazardous materials emergencies are coordinated, in part, through the Area Plan. This document also references information covering hazardous substance inventories and emergency response spill planning received from regulated businesses, community groups and the U.S. Coast Guard which also are integrated into this Area Plan and the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan.

The Area Plan is designed to integrate the operational activities of San Diego County's Emergency Services Organization, Hazardous Incident Response Team (HIRT) into the on-scene operational procedures for the local, State or Federal agency who have primary responsibility for a hazardous chemical emergency in the jurisdiction.

The Hazardous Materials Division

The San Diego County Hazardous Materials Division (HMD) is the administering agency for the California Health and Safety Code (HSC) Chapter 6.95, hazardous materials release response plans and inventory, and the California Code of Regulations, Title 19. As the Certified Unified Program Agency (CUPA), the HMD has overall responsibility for the Business Plan Program, the Risk Management Plan Program, the Area Plan, and Community-Right-to-Know and Chemical Emergency Response Services. As the sole CUPA (effective July 1, 1996) in San Diego county, the HMD is also the lead regulatory agency in the county for conducting inspection activities related to hazardous waste generators (HSC Chapters 6.5), hazardous and acutely hazardous materials users, (HSC Chapter 6.95, Articles 1 & ***2),***underground storage of hazardous materials (HSC Chapter 6.7), and medical waste generators (HSC Chapter 6.1).
The HMD was created in 1981 to provide a regional program to regulate the use and disposal of hazardous materials and waste. The HMD has grown from a single-person unit in 1981 to a

program which now has approximately 50 professional staff. In the fiscal year 2005-06, the HMD inspected approximately 13,000 facilities required to San Diego County Operational Area 1 March 2007 Hazardous Materials Area Plan comply with one or more of six CUPA program elements.

Industry Compliance Program

The HMD Industry Compliance Program enforces the California Health and Safety Code (HSC) Chapters 6.1 (Medical Waste Management), 6.5 (Hazardous Waste Generators),

6.7 (Underground Storage of Hazardous Substances), and 6.95 (Business Plans).

In 1989, the San Diego County Board of Supervisors adopted an ordinance establishing a medical waste management program-the first program of its kind in California. Currently the HMD conducts inspections of medical waste generators and requires the generators to prepare a Medical Waste Management Plan.

The HMD also provides hazardous materials emergency response services in a coordinated effort with the SDFD. These activities are conducted countywide under a Joint Powers Agreement (JPA), of which the cities in San Diego County are a part.

The HMD enforcement of HSC Chapter 6.95 (CCR Title 19) requires a permit for the following activities:

- Storage of hazardous materials in quantities greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet.
- Construction or modification of a facility which will store the above quantities of hazardous materials.
- Storage of specified quantities of Acutely Hazardous Materials above Threshold Planning Quantities.

The HMD Industry Compliance Program also incorporates the requirements of California Health and Safety Code, Section 25503(e)(1). As part of the Program, staff will regularly inspect permitted businesses and gather information regarding inventory, emergency response and employee training.

Data Management System

The HMD has developed a computer system to manage data submitted by businesses and collected during on-site waste generator and/or community right-to-know inspections of permitted businesses. This data management system is used to store business-specific information, such as hazardous materials inventory, waste generation information, underground hazard materials storage and site maps. The system also stores emergency contact information, generates inspection records, notices of violation, billing and fees, and compiles information for various reports.

Reports include the First Responder Hazardous Materials Business Plan (FRHMBP), which are specialized summaries of hazardous materials inventories of all businesses that contain hazardous materials. The FRHMBP is designed to easily keep responding

San Diego County Operational Area 2 March 2007 Hazardous Materials Area Plan personnel aware of the chemical hazards within businesses in their jurisdiction. It also serves as an aid in conducting informed hazard and risk analysis during chemical emergencies.

FRHMBP reports and electronic information in the form of a comprehensive secure database on a CD are provided to all fire agencies in the region, and updated each month. Hardcopies and Electronic versions are kept at HMD headquarters and on each HIRT vehicle. Emergency response personnel on the HIRT vehicles are able to access additional information using onboard computers and cellular modems.

The HMD's Data Management System also generates monthly reports for fire agencies throughout San Diego County. These reports include business and inventory data on CDROM and in hard copy format. Reports are also available to fire departments upon request. Limited, non-confidential data concerning businesses are also available on the DEH website.

In addition to the existing DEH-HMD data management system, the department is developing a Local Area Network (LAN) based software package supported by a Graphic Information System (GIs) for accessing and managing all CUPA required data collection and reporting information. When implemented up-to-date hazardous materials storage, handling and emergency response information will be accessible to stakeholders and fire agencies from a desktop computer or available on line 24 hours per day. DEH hopes to have the system operational sometime in 2008.

One component of the GIS data set will include the Consequences Assessment Tool Set (CATS) provided by Science Applications International Corporation (SAIC). CATS software assesses the consequences of technological and natural disasters to population, resources, and infrastructure. It is a user-friendly software package for the PC which combines state-of-the-art hazard and consequence prediction, digital, and GIs information within an easy-to-use Graphical Interface, and is available on HIRT vehicles for use during chemical emergencies.

In addition to the current hazardous materials storage and handling inventory information maintained by DEH-HMD for first responders, a duplicate of that data is routinely provided to the San Diego County Regional Poison Center on CD-ROM. This information is available upon request 24 hours per day for use by emergency response and medical personnel.

Additionally, DEH and the Poison Control Center use the Micromedix's Database (Chemknowledge®). The Chemknowledge® database provides the response agencies with critical information covering the physical, chemical and biological hazards and risk characteristics of hazardous materials used by businesses in the county. Chemknowledge® is also available on all HIRT emergency response vehicles.

The business-specific inventory information collected by the HMD Industry Compliance Program is also used to identify those facilities that handle hazardous substances which may require a risk management plan (RMP). A stationary source (non-transportation) with more than a threshold quantity of a "regulated substance" in a process is required to Prepare and submit a risk management plan to the CUPA.

San Diego County Operational Area 3 March 2007 Hazardous Materials Area Plan The RMP requires a facility to conduct a comprehensive evaluation of all the administrative and operational procedures associated with a process using "regulated substances" within a facility. The risk management plan consists of a hazard assessment process which requires owners to identify the regulated substance and quantities on-site, document a five-year accident history, develop worst-case and most likely release models which affect the community, and develop an accidental release prevention program and emergency response plan. After a suitable review, HMD and the USEPA will receive and approve all RMPs.

Currently, approximately 120 businesses in the county are preparing RMPs following State and Federal requirements.

The facility screening method and other specific CalARP information is contained in the "Hazardous Materials Division California Accidental Release Prevention Program Guidelines" (February 25, 1999) (Appendix E).

San Diego County Operational Area 4 March 2007 Hazardous Materials Area Plan

The Unified San Diego County Hazardous Materials Incident Response Team

The Department of Environmental Health, Hazardous Materials Division has been the State designated enforcement authority for hazardous waste management in San Diego County since 1981. Emergencies resulting from releases of hazardous materials occur throughout the county. These emergencies include illegal abandonment or disposal of hazardous wastes, industrial manufacturing and transportation accidents, clandestine drug lab activities, chemical explosions and hoaxes involving hazardous materials and biological agents.

Recognizing the need to protect the public health from chemical release emergencies, the County of San Diego Board of Supervisors directed staff to amend the Unified San Diego County Emergency Services Agreement to establish and implement the Hazardous Incident Response Program (February 11, 1986). Unanimously approved by all incorporated cities and the county, the Unified Disaster Council (UDC) became the governing body of the program whose daily operation is administered by the Office of Emergency Services (OES). The HIRT Program is funded through a Joint Powers Agreement (JPA) of the UDC with contributions from each incorporated City and the County. The funding formula is based on property-assessed values, populations and the number of incident responses occurring in each jurisdiction. The total program budget for FY 05/06 and FY 06/07 is $1,490,494. Program costs are reduced by revenue from responsible party cost recovery, interest on the HIRT Trust Fund, and contributions from the United States Marine Corps on MCAS Miramar, Campo and Pala Indian Reservations.

The single-source contract with the JPA calls for hazardous materials emergency response to be provided countywide through the joint efforts of the San Diego Fire-Rescue Department (SDFD) HAZMAT Team and the San Diego County Hazardous Materials Division (HMD) HAZMAT Team. Each of these agencies have highly trained teams with many years experience in responding to hazardous materials emergencies.

The SDFD HIRT is responsible for mitigating, containing and/or controlling the release, effecting rescues and other related tasks. The DEH HIRT is responsible for assessing the risk to public health and safety and the environment, taking the necessary steps to mitigate these hazards, ensuring adequate cleanup of the area and conducting necessary enforcement activities. HIRT provides advice and technical support to the first responder but does not assume scene management responsibilities. The first responder or appropriate agency maintains full control and authority over the incident and retains responsibility for release of public information concerning the incident. Complete descriptions of background information, the purpose and objectives of HIRT, the legal authority and the mutual aid agreements that allow its continued operation are discussed in the Unified San Diego County Emergency Services Organization HIRT Program description (Section D).

Historically, in the 20 plus years of operation, the HIRT has responded to approximately 8000 chemical emergencies. Generally, 50% of the chemical emergencies occur in the City of San Diego, with 20% in the unincorporated areas of the county and the remaining 30% in the other cities. In the unincorporated county areas there remains a heavy dependency on HIRT services to support the limited response resources that often are

San Diego County Operational Area 5 March 2007 Hazardous Materials Area Plan

Appendix VIII

Other Resources

Other Resources for Appendix VI will be added once collected.

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX C

Law Enforcement Mutual Aid Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX C

LAW ENFORCEMENT MUTUAL AID OPERATIONS

ACKNOWLEDGEMENTS

Sheriff

William D. Gore, Sheriff
Thomas J Cooke, Undersheriff

Law Enforcement Mutual Aid Operations

Commander Ed Prendergast, Sheriff's Department
Captain Edward Musgrove, Sheriff's Department
Lieutenant Todd Richardson, Sheriff's Department
Lieutenant Jenene Milakovich, Sheriff's Department

Operational Area Plan Review Committee

Deputy Chief Dismas Abelman, Solana Beach Fire Department
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San Diego County Office of Emergency Services

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ANNEX C
LAW ENFORCEMENT MUTUAL AID OPERATIONS

I. General

This Annex establishes organizational responsibilities and general procedures for the local law enforcement jurisdictions, and supporting agencies during natural and manmade disasters.

II. Objectives

The primary objectives of law enforcement are the preservation of life and property and the maintenance of law and order. Functional objectives for law enforcement operations are:

A. Coordinate the mobilization of personnel and equipment from supporting agencies (e.g., Sheriff's Department, Jurisdictional Law Enforcement Agencies, District Attorney Investigators, Probation Department, Tribal Governments, Parks and Recreation).

B. Receive and disseminate warning information to the general public.

C. Deploy personnel and equipment to locations needed to accomplish primary objectives.

D. Coordinate evacuation of hazardous areas, and provide perimeter security and access control.

E. Provide security for essential facilities, services, and resources.

F. Maintain the safety and security of persons in custody.

G. Implement aerial surveys of the area to provide accurate information on hazards, victims, conditions, damage assessment, and other vital information.

H. Coordinate the establishment of emergency traffic routing and ingress/egress procedures with the California Highway Patrol or jurisdictional agency.

I. Assist in the establishment of Multi-agency Staging Areas.

J. Coordinate with cities/jurisdictions in the Operational Area, Tribal Governments, Region and State agencies in accordance with local mutual aid agreements, the California Law Enforcement Mutual Aid Plan, the Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the National Response Framework (NRF).

III. Concept Of Operations And Activation Of Mutual Aid

The Sheriff is the Operational Area Law Enforcement Mutual Aid Coordinator. During emergencies, individual law enforcement agencies will operate under their own departmental emergency plans with their existing resources. When a Chief of Police or his/her designee

determines that an emergency situation in his/her jurisdiction may extend, or is already, beyond the control of his/her department's resources, it is the Chief's responsibility to request mutual aid from the Operational Area Law Enforcement Mutual Aid Coordinator).

IV. General Requirements For Mutual Aid

General requirements for requesting Mutual Aid include:

1. An emergency must exist or be imminent; and
2. A significant number (50% or more) of local resources must be committed prior to the request for Mutual Aid.
3. A specific mission has to be stated.

Point of Contact

Requests for Mutual Aid should be directed to:

1. The Sheriff's Watch Commander via the Sheriff's Communications Center
2. The Law Enforcement Mutual Aid Coordinator in the Sheriff's Departmental Operations Center (DOC), when activated.

Unanticipated Situations

Departments experiencing an unanticipated situation that is developing (but has not yet occurred) and it appears that the department's resources may soon be insufficient, should contact the Operational Area Law Enforcement Coordinator (the Sheriff, or his/her designee via the Sheriff's Communications Center Watch Commander) and advise that the department may be requesting mutual aid. This will help reduce response times.

Planned Events

If an agency has a planned event (i.e., concert, parade, etc.), a formal request for mutual aid cannot be made until an unanticipated emergency, or incident occurs, that may become or is already beyond the control of the agency's available resources. Departments may, however, utilize other departments' personnel, equipment, and/or supplies by mutual agreement (MOU, Joint Powers Agreements, etc). Under these special agreements, the immunities, benefits, and funding available under formal mutual aid may not be available.

Proclamation of Emergency

A situation requiring mutual aid resources beyond the Operational Area level would usually result in a proclamation of a local emergency. While a proclamation of local emergency is not required for requests within the Operational Area or requests to the Operational Area Law Enforcement Coordinator, local government jurisdictions should consider making such a proclamation should an incident reach the mutual aid level due to the special powers and immunities that accompany such a proclamation.

Such proclamations are normally made by:

1. City Council or Board of Supervisors
2. City Manager or Chief Administrative Officer if Council or Board of Supervisors is not in session.

V. Organization And Responsibilities

The Sheriff serves as the Operational Area Law Enforcement Coordinator. When Mutual Aid is requested by a local law enforcement agency, the Sheriff or his/her representative will:

1. Confirm an emergency or anticipated emergency exists.
2. Establish that the involved local agency's resources are inadequate to meet the demands of the incident (and meet the criteria for a mutual aid request).
3. Obtain the mission(s) for responding personnel.
4. Through coordination with the Incident Commander, determine the quantity and type of resources needed to accomplish the mission(s).
5. Determine where to stage the incoming mutual aid resources.
6. Identify the Liaison Officer of the requesting agency who will serve as the point of contact.
7. Ensure both the requesting agency and the Law Enforcement Mutual Aid Coordinator establish appropriate documentation procedures.
8. Ensure responding resources are demobilized as soon as they are no longer needed.

If the Operational Area Law Enforcement Mutual Aid Coordinator determines there are insufficient resources within the Operational Area, he/she will contact the Regional Law Enforcement Mutual Aid Coordinator (Region VI). The Regional Law Enforcement Mutual Aid Coordinator will then contact all necessary law enforcement agencies within Region VI to obtain the needed resources. If the Regional Law Enforcement Mutual Aid Coordinator determines resources are insufficient within the region, he/she will then contact the Cal EMA Law Enforcement Mutual Aid Coordinator who will contact all necessary Regions within the state. Figure 1 outlines the Law Enforcement Mutual Aid Regions and progression of requests.

VI. Use Of Military Forces For Mutual Aid

State Military Forces

The Governor will normally commit the California National Guard (CNG) resources in support of civil authority only upon determination that:

1. An emergency condition exists or is imminent; and
2. All civil resources have been or will be reasonably committed; and
3. Civil authority can not or will not be able to control the situation; and
4. Military assistance is required and has been requested by the chief executive of a city or the sheriff of a county.

Federal Military

Commanders may commit federal troops:

1. Upon direction of the President of the United States; or

2. When the local commander feels that there is:
    A. An immediate and imminent threat to life; and
    B. Local resources are unavailable; and
    C. A delay in established mutual aid would result in unnecessary deaths, injuries or extensive property damage.

VII. Related Law Enforcement Mutual Aid Issues

Command

The local requesting agency remains in charge of the incident unless command is relinquished. Generally, responding resources from a jurisdiction will remain together. However, if used to supplement patrol, they could be paired with a local officer who is familiar with the area.

Fiscal Issues

Unless otherwise agreed to:

1. The requesting agency is responsible for feeding, billeting, fuel, and other on-scene support.
2. The requesting agency is not responsible to provide salary or employment benefits.
3. Emergency medical costs for a responder are paid by the responder's agency.
4. Damaged equipment (i.e. vehicles) is not reimbursable by the requesting agency. If a State Proclamation or Federal Declaration has been made, the responding agency should submit a claim through the requesting agency.
5. Materials used are normally replenished by the requesting agency.

VIII. Additional Duties Of The Operational Area Law Enforcement Mutual Aid Coordinator

A. Coordinate with involved law enforcement agencies to establish a central point of incident information related to law enforcement responsibilities, such as the DOC.

B. Coordinate with affected law enforcement agencies to determine objectives and priorities affecting the allocation of mutual aid resources.

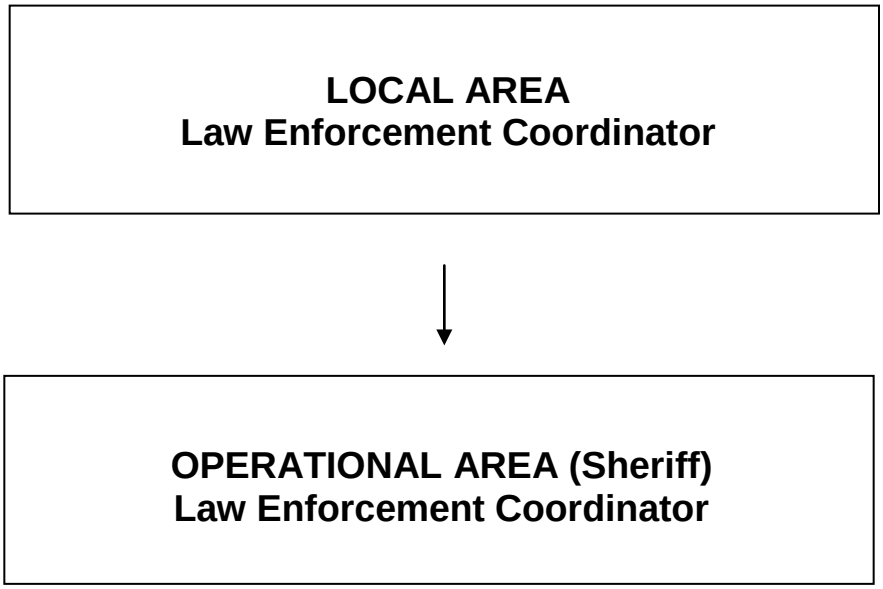
C. Coordinate with affected law enforcement agencies in developing Operational Area inter-jurisdictional law enforcement activities and plans (evacuation, area control, traffic control, etc.) during widespread emergencies or disasters.

D. Provide for representation in the Operational Area Emergency Operations Center (EOC) Management and Operations Sections.

E. Assist the Office of the Medical Examiner in security and mutual aid requirements.

Figure 1

ACTIVATION CHANNELS FOR LAW ENFORCEMENT MUTUAL AID



ATTACHMENT A

SUPPORTING ORGANIZATIONS

1. Jurisdictional Law Enforcement Agencies from the Operational Area
2. Port of San Diego Harbor Police
3. County Sheriff
4. County Probation Department
5. County Department of Animal Services
6. School District Police
7. California Highway Patrol (CHP)
8. County District Attorney Investigators
9. County Department of Parks and Recreation
10. California National Guard
11. California Department of Justice
12. California Department of Corrections
13. California Fire Marshal
14. Military Forces of the United States

ATTACHMENT B

TYPES OF SUPPORT

Law Enforcement Support May Be In One Or More Of The Following Missions:

1. Law Enforcement
2. Aerial Support
3. Special Teams (SWAT, hostage negotiators, etc.)
4. Mobile Field Force (Platoon)
5. Traffic Control
6. Evacuation
7. Search and Rescue
8. Field Bookings
9. Prisoner Management
10. Building and Facility Security
11. Mass Care/Collection Center Security
12. Explosive Ordnance Disposal
13. Investigation of Arson and Bombings
14. Waterborne Enforcement/Dive Rescue and Support
15. Metropolitan Medical Strike Team (MMST)
16. Security

ATTACHMENT C

ACCESS CONTROL

Introduction

In the event of an existing natural disaster, manmade incident or a nuclear defense emergency, it may be necessary to restrict access to and from a hazard area. There are four aspects to consider:

A. Perimeter control and area security

B. Access control (to and from the perimeter)

C. Command Post coordination

D. Temporary Evacuation Points (TEPs)

Objectives

The overall objectives of access control operations will be to:

A. Provide a controlled area and prevent entry by unauthorized persons.

B. Protect lives by controlling entry into extreme hazard areas, thus reducing public exposure to the current or pending hazard agent.

C. Maintain law and order in the hazard area as well as the normal areas of responsibility.

D. To control the entry of authorized persons into the closed area.

Situation

A hazard or a potentially hazardous situation could justify the need to control or limit access for a short period of a few hours to several days, weeks, or months, depending on the hazard and its severity. In order to limit access to the closed area, various personnel and devices will be required in the following functions:

A. Establish a control point (may be the Command Post).

B. Staff access point(s).

C. Establish a system of ingress and egress from secured areas for authorized persons and media.

D. Route traffic from highway and surface roads away from closed areas.

E. Utilize signs and/or markers to provide motorists with advance notice of secured areas.

F. Provide security in closed areas with patrols or airborne monitoring.

G. Establish and coordinate with the American Red Cross, TEPs and/or Evacuation Centers for evacuated, displaced or relocated persons.

Operational Considerations

There are seven levels of operation that effect access control. They are listed in priority:

A. Lifesaving operations.

B. Evacuation operations.

C. Medical Examiner operations and continued rescue.

D. Safety Inspection Teams.

E. Owners and managers of critical facilities.

F. Authorized managers and employees of businesses.

Responsibilities

Local

Law Enforcement

A. Handle law enforcement duties both inside and outside of the secured areas.

B. Direct the placement of barricades and traffic control devices.

C. Establish a command post and control point for the perimeter.

D. Initiate TEPs and/or Evacuation Centers, with the Red Cross, if needed.

E. Initiate an entry pass system.

Departments of Planning and Land Use, Building Inspection Division

A. Determine structural safety of buildings to be used for care and shelter of evacuees.

Environmental Health Department/HIRT

A. Determine environmental safety.

Operational Area

Sheriff's Department

A. Handle law enforcement for all unincorporated and contracted areas.

B. Support access control effort; coordinate with the local law enforcement agency or California Highway Patrol in the unincorporated area.

Environmental Health Department

A. Determine environmental safety.

State

California Highway Patrol

A. Manage and direct access control on the state and federal highway systems and, in cooperation with the Sheriff's Department, the unincorporated public roads.

ATTACHMENT D

EVACUATION OPERATIONS

INTRODUCTION

Law enforcement agencies and supporting organizations have the responsibility of evacuation, dispersal, and relocation of persons from threatened or hazardous areas to less threatened areas during natural disasters and manmade incidents. This attachment describes the organization and responsibilities for conducting evacuation operations, with the ultimate goal of protection of lives. “Annex Q – Evacuation” provides more detailed information on this issue.

Objectives

The overall objectives of emergency evacuation notifications and operations are to:

A. Expedite the movement of persons from hazardous areas.

B. Control evacuation traffic.

C. Coordinate transportation for disabled persons, the elderly, and persons without vehicles.

D. Institute access control measures to prevent unauthorized persons from entering vacated, or partially vacated areas.

E. Provide for the procurement, allocation, and use of necessary transportation resources and law enforcement resources by means of mutual aid or other agreements.

F. Coordinate evacuation to appropriate mass care facilities.

Situation

Evacuations involving only a small number of people can generally be handled without elaborate measures by on-scene public safety personnel. Large scale evacuation should be supported by the Emergency Operations Center and the Departmental Operations Centers of the involved agencies.

Legal Considerations

In 2005, the Chief Legal Counsel for the Sheriff maintained an opinion based on case law that Penal Code section 409.5 does NOT authorize forcible evacuations: “In conclusion, without a specific legislative amendment to Penal Code section 409.5, it would be improper to infer statutory authority to forcibly evacuate people who do not wish to be evacuated, unless their presence in the closed area, resulted from an entry made after the area was closed pursuant to 409.5(a) or 409.5(b)”. All procedures in this plan, therefore, will pertain to voluntarily evacuated persons.

Organization And Responsibilities

County

The designated County Evacuation Coordinator is the Sheriff. The Evacuation Coordinator will be assisted by other county police resources and support agencies.

Evacuation operations will be conducted by law enforcement agencies, highway/road/street departments, and public and private transportation providers. Procurement, regulation, and allocation of resources will be accomplished by those designated.

Operational Area

In large scale evacuation operations, the Operational Area Law Enforcement Coordinator is responsible for coordinating transportation resources and operations on a countywide basis. This coordination will be accomplished in the Operational Area EOC with the involved city EOCs and the Sheriff's Department's DOC.

Mutual Aid Region

A designated member of the California Highway Patrol (CHP) will function as the California Emergency Management Agency (CalEMA) Mutual Aid Region Movement Coordinator and will coordinate traffic control operations on a regionwide basis. The Movement Coordinator will be assisted by a representative of the State of California's Department of Transportation (CALTRANS), who will function as the Mutual Aid Region Transportation Coordinator.

These coordinators will work between the Operational Area and Statewide resources.

State

The coordination and support of evacuation operations on a Statewide basis will be accomplished according to the State Emergency Plan.

State agencies which may be involved in a major evacuation are the CHP, National Guard, CALTRANS, and Public Utilities Commission.

Federal

The U. S. Department of Transportation supports and assists federal, state, and local agencies with disaster relief transportation requirements. The Federal Aviation Administration can assist with communications and search and rescue coordination. The Interstate Commerce Commission coordinates the location and scheduling of common carriers authorized and equipped to provide emergency transportation into and within disaster areas.

Procedures

Identifying the Area and Population to be Evacuated

Site-specific information which identifies areas at risk for the known hazards that could threaten the Operational Area is referenced in the Basic Plan, Attachment A. This information provides guidance in making decisions about the area to be evacuated. For areas not covered by specific plans, data gathered at the time of the threat will determine the hazard area. Throughout the emergency period, it will be necessary to continuously reevaluate the size and location of the danger area and, if necessary, expand the areas of evacuation.

Coordinating with the American Red Cross

The Red Cross is able to establish evacuation facilities and perform many logistical functions for those facilities. The Evacuation Coordinator should establish liaison with the Red Cross early in the evacuation process. The Law Enforcement Coordinator will coordinate security at the mass care shelters.

Identifying Temporary Evacuation Points (TEPs)

An event may occur that requires an immediate evacuation out of the danger area. For such an event, it may be necessary to evacuate to TEPs. These points can be used as staging areas with the intent to relocate, or as short-term holding areas. The selection of the location will require consideration for the type of incident, location, safety from incident, number of persons involved, and weather conditions. The goal is to safely evacuate to an appropriate, safe location. TEPs ideally should have access to restrooms and adequate space for the numbers involved. Potential sites include middle schools, high schools, parks, elementary schools and parking lots not downwind or in the potential path of the hazard.

Identifying Evacuation Routes

The Evacuation Coordinator will coordinate with the Incident Command Post to select the best routes from the endangered area to mass care facilities or TEPs, considering the size, physical impairments, medical or special needs of the population to be moved, road capacity, and the roads which could become impassable. For areas not covered by site-specific plans, the best evacuation routes are selected at the time of the event. As the emergency situation develops, the Evacuation Coordinator requests regular updates from field personnel on the condition of the road network and adjusts the selection of evacuation routes accordingly.

Changes in evacuation routes are communicated to traffic control personnel, transportation resource coordinators, access control personnel, Reception and Care Center Directors, and Public Information Officers.

Warning the Public and Providing Evacuation Instructions

When the decision to evacuate is made, and facilities and routes are designated, the public is alerted and given evacuation instructions by various means. Emergency Alert System (EAS) broadcast technology is installed at the Operational Area EOC as well as in the Office of Emergency Services. R911 and Alert San Diego augment EAS for the dissemination of emergency public information. See Annex L for additional information.

Evacuation information provided to the public will include the following:

1. When and why they must evacuate.
2. Routes to take, including conditions of roads, bridges, and freeway overpasses.
3. Where to go for mass care.
4. Anticipated duration of the emergency and evacuation.
5. Public Information Officers and field units using public address systems may also be necessary.

Evacuating Special Facilities

Facilities which require special plans and resources to carry out evacuations include hospitals, prisons, institutions for the handicapped or disabled, and nursing homes. These facilities should have their own evacuation plans, personnel trained, and logistics arranged, but this may not always be the case. Law Enforcement will provide evacuation assistance to these facilities as resources are available. Facilities like these will be warned of the emergency situation.

Providing Transportation Assistance

Some people may not have access to a motor vehicle, including households without motor vehicles and persons left at home without a vehicle. Some people with disabilities or illnesses may require special transportation assistance. The number of persons requiring transportation assistance varies substantially from area to area, and by time of day, and day of the week. Buses, vans, ambulances, and other transport vehicles will be requested from transportation providers. The public will be told where to go to obtain transportation and a telephone number will be provided for persons who require special assistance.

Controlling Traffic

Traffic controls are established at key intersections and at access points on evacuation routes, to expedite the flow of traffic. It may be necessary to control traffic on routes outside the hazard area to minimize conflicts with evacuation traffic.

Security of Evacuated Areas

Once an area has been evacuated, Law Enforcement will provide security for the evacuated areas including key facilities, resources and supplies as required.

APPENDIX C-1

LAW ENFORCEMENT EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Dispatch units to survey damage, particularly pre-designated key facilities, and initiates roll call of units.	Jurisdictions/ Communication Centers
Provide alternate communications, if telephone or radio communications are not operational	Communications/Watch Commanders
Call in regular personnel and reserves; assign responsibilities according to plan.	Watch Commanders/ Station Commanders/ agency DOCs
Assist or join in establishment of multi-agency staging areas.	Incident Commander/ Sheriff's DOC
Contact American Red Cross for potential and confirmed evacuation and shelter needs of displaced population.	Law Enforcement/ Communication/ OES
Coordinate relocation of evacuees to safe areas.	Law Enforcement
Coordinate the evacuation of hazardous areas with other agencies.	Law Enforcement
Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.	As Assigned
Provide law enforcement and crowd control at mass care facilities.	Law Enforcement
Continue surveys for further damage or hazards.	ASTREA/ Field Units
Impose curfew, if appropriate.	Sheriff/ Law Enforcement
Assist with the evacuation of institutionalized persons, as necessary.	Incident Commanders
Request mutual aid assistance from the Operational Area Enforcement Coordinator, as appropriate.	Law Enforcement
Request mutual aid assistance from the regional coordinator as appropriate.	Sheriff

Law Enforcement Earthquake Response

Action	Responsibility
Assist in heavy rescue operations.	Incident Commander SAR/USAR
Provide security to protect people remaining in area.	Incident Commander
Provide traffic control.	Incident Commander/ CHP
Assist emergency vehicles and equipment in entering or leaving the area.	Incident Commander/ CHP
Establish perimeter access control, as required.	Incident Commander/ CHP
Coordinate with the Construction and Engineering Coordinator for streets/roads barricades.	Incident Commander
Establish security for vital facilities and essential supplies.	Law Enforcement
Control access to these facilities giving priority to utility repair and industrial recovery teams.	Incident Commander
Coordinate with CHP to determine capacity and safety of evacuation routes.	Incident Commander
Coordinate with Public Works and Fire Department for debris clearance and heavy rescue operations.	Incident Commander
Evacuation advisory if dam failure is possible.	Law Enforcement/ Fire
Request mutual aid assistance from the Operational Area Enforcement Coordinator, as appropriate.	Law Enforcement
Request mutual aid assistance from the regional coordinator as appropriate	Sheriff
Invoke and assist with re-entry protocol.	EOC Director

APPENDIX C-2

LAW ENFORCEMENT EMERGENCY ACTION CHECKLIST
RESPONSE TO A HAZARDOUS MATERIALS INCIDENT

Action	Responsibility
Carry out assigned duties in accordance with the San Diego County Hazardous Materials Area Plan.	Field Units/ Jurisdiction Communication Center
Determine if evacuation of population is necessary and notify all Law Enforcement agencies in the Operational Area.	Incident Commander/ Communication Center
If area is compromised by Chemical, Biological or Radiological agents, responding personnel will be advised to don appropriate PPE.	Incident Commander/ Communication Center
Notify American Red Cross of any potential evacuation.	Law Enforcement Communication Centers/ OES
Determine location of mass care facilities, as necessary.	American Red Cross
Dispatch units to survey the situation, and to estimate the extent of the affected area.	Incident Commander Jurisdiction
Notify appropriate local, state, and federal hazard response agencies.	Communication Centers/OES
Assist or join in establishment of multi-agency staging areas.	Incident Commander/ Sheriff's/OES
Contact National Weather Service for wind direction and other weather information.	Communication Centers/OES
Notify personnel to remain upwind or upstream of the incident site. This may require repositioning of personnel and equipment as conditions change.	Incident Commander
Establish traffic and perimeter control for affected area.	Incident Commander/ CHP
Assist in the coordination of medical assistance.	Communication Centers/EMS
Direct designated hazardous incident responders to the incident site.	Communication Center/ Incident Commander

Law Enforcement Hazardous Materials Incident

Action	Responsibility
Assist in efforts to identify spilled substance. This would include locating shipping papers, placards and making contact as required.	Hazardous Incident Response Team (HIRT)/ Law Enforcement
Assist in the warning dissemination and search and rescue operations.	Law Enforcement
Establish command post with other emergency responders.	Law Enforcement
Provide law enforcement and crowd control services at mass care facilities.	Law Enforcement
Determine if the use of aircraft will make hazardous conditions worse. If so, convey information to appropriate parties.	HIRT/ Incident Commander
Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.	Law Enforcement
Establish traffic and other controls to permit re-entry when safe.	Law Enforcement
Request mutual aid assistance from the Operational Area Law Enforcement Coordinator, as appropriate.	Law Enforcement
Request mutual aid assistance from the regional coordinator as appropriate	Sheriff
Invoke and assist with re-entry protocol.	EOC Director

APPENDIX C-3

LAW ENFORCEMENT ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

Flooding Expected

Action	Responsibility
Issue evacuation advisory, as necessary.	Incident Commander
Warn population in threatened areas, if evacuation is warranted.	Law Enforcement Field Units/ Fire Units/ Aerial Law Enforcement/ OES
Notify American Red Cross.	Law Enforcement/ Communication Centers/OES
Determine location of mass care facilities, as necessary.	American Red Cross
Prepare to relocate personnel and equipment from stations that are subject to flooding.	Station Commanders
Review evacuation routes and warning procedures, including special facilities, such as hospitals, convalescent homes, residential care facilities and others requiring special assistance.	Incident Commander/ OES/ Department of Operations (DOC)
Place reserves and auxiliaries on standby.	Law Enforcement/ DOCS
Prepare to move personnel from detention facilities subject to flooding.	Law Enforcement/ Facility Commander/ Warden
Provide security for vacated areas.	Law Enforcement
Establish access controls to vacated areas.	Law Enforcement

Flooding Occurs: Law Enforcement Flood Response

Action	Responsibility
Activate warning procedures.	Fire/Law Enforcement/OES
Notify American Red Cross	Law Enforcement/ Communication Center/OES
Determine location of mass care facilities.	American Red Cross
Implement Evacuation advisory plans	Law Enforcement/ OES
Coordinate with fire agencies, lifeguards and other public service agencies for the rescue of persons trapped in flooded areas.	Law Enforcement/ Fire
Assist or join with other agencies in establishing multi-agency staging areas.	Incident Commander Sheriff's DOC
Provide law enforcement and crowd control at mass care facilities.	Law Enforcement
Conduct aerial survey of impacted area.	ASTREA/ABLE
Request mutual aid assistance from the Operational Area Law Enforcement Coordinator, as appropriate.	Law Enforcement
Request mutual aid assistance from the regional coordinator as appropriate.	Sheriff
Invoke and assist with re-entry protocol.	EOC Director

APPENDIX C-4

LAW ENFORCEMENT EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

Dam Failure Imminent

Action	Responsibility
Issue evacuation advisory, as necessary.	Incident Commander
Attempt to warn population in dam inundation area using all available means.	Law Enforcement/Fire /OES
Notify American Red Cross.	Law Enforcement/ Communication Center/OES
Determine location of mass care facilities for displaced population.	American Red Cross
Provide traffic control for evacuation.	Law Enforcement
Provide security for vacated areas.	Law Enforcement
Establish access controls to vacated areas.	Law Enforcement

Dam Failure Occurs: Law Enforcement Dam Failure Response

Dispatch aerial and ground units to survey extent and severity of damage including aerial survey.	Incident Commander
Provide security for damaged area.	Law Enforcement
Coordinate search and rescue operations.	Incident Commander
Assist fire units and heavy equipment operators in entering or leaving vacated area.	Field Unit/CHP
Coordinate with Public Works and Fire Department for debris clearance and heavy rescue operations.	Incident Commander
Provide law enforcement and crowd control services at mass care facilities	Law Enforcement
Provide alternate mobile communications if necessary.	Incident Commander/ Sheriff's Data Services/ Wireless Services Unit

Assist with the removal and disposition of the dead, if requested by the County Medical Examiner.	Law Enforcement
Impose curfew, if appropriate.	Law Enforcement
Request mutual aid assistance from the Operational Area Law Enforcement Coordinator, as appropriate.	Law Enforcement
Request mutual aid assistance from the regional coordinator as appropriate.	Sheriff
Assist or join with other agencies in establishing multi-agency staging areas.	Incident Commander/ Sheriff's DOC
Invoke and assist with re-entry protocol.	EOC Director

APPENDIX C-5
LAW ENFORCEMENT EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR FIRE

Action	Responsibility
Notify Law Enforcement of any potential evacuation.	Incident Commander
Notify American Red Cross.	Law Enforcement/ Fire/OES
Provide security and protection.	Law Enforcement
Evacuation advisory to unsafe areas and designate Temporary Evacuation Points (TEPs), as necessary.	Law Enforcement
Warn population in threatened areas.	Law Enforcement/ Fire/OES
Determine location of mass care facilities.	American Red Cross
Coordinate transportation Law Enforcement of people in special facilities.	Law Enforcement
Provide crowd/perimeter control.	Law Enforcement
Invoke and assist with re-entry protocol.	EOC Director

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX D

Mass-Casualty Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX D

Mass-Casualty Operations

ACKNOWLEDGEMENTS

Mass-Casualty Operations

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ANNEX D
MASS-CASUALTY OPERATIONS

I. General

The Mass-Casualty Operations Annex to the Operational Area Emergency Plan describes the basic concepts, policies and procedures for providing a coordinated medical care response to any mass-casualty incident. This Annex serves as the unifying document for the emergency plans of local hospitals, cities and emergency service agencies. The Emergency Services Agreement, between and among the County of San Diego and the cities in the Operational Area, provides for a county wide medical emergency services program.

Purpose

The purpose of this Annex is to establish a disaster medical system and prescribe responsibilities and actions required for the effective operation of the medical response to disasters.

Goals and Objectives

The overall goals of disaster medical operations are to:

A. Minimize loss of life, subsequent disability, and human suffering by ensuring, through an all-hazards approach, timely and coordinated medical assistance, to include evacuation of severely ill and injured patients.

B. Coordinate the utilization of medical facilities and the procurement, allocation, and distribution of medical personnel, supplies, communications, and other resources.

C. Provide a system for receipt and dissemination of information required for effective response to, and recovery from, the effects of a major disaster.

The objectives of this Annex are to:

A. Describe the concept of operations, organization, and medical response system to implement this Annex.

B. Establish procedures for activating and deactivating this Annex.

C. Provide a system for prompt medical treatment of disaster victims.

D. Provide for the management of medical services, facilities, activities, and resources.

E. Provide a basis with which County departments and local agencies establish support plans and standard operating procedures.

Concept of Operations

For the purposes of this Annex, a medical mass-casualty incident applies primarily to a major medical emergency situation, or potential situation, creating sufficient casualties to exceed the capabilities of the local medical system.

Plan Utilization

Utilization (Alert, Activation, and Termination) of this Annex shall be at the direction of (1) the County's Chief Administrative Officer (CAO) in that capacity, or as Area Coordinator of the Unified San Diego County Emergency Services Organization; (2) a designated Deputy CAO; (3) the Director, Office of Emergency Services or designated representative; (4) Public Health Officer or designated representative (5) Chief, Emergency Medical Services or designee; (6) the Incident Commander; (7) the Facilitating Base Hospital or (8) County of San Diego Sheriff's Communication Center (SCC).

The on-scene Incident Commander or his/her designee (e.g. the Medical Coordinating Unit), shall notify their dispatch center to alert/activate Annex D. The Medical Coordinating Unit's dispatch center then contacts the Sheriff's Communications Center (SCC) and requests the alert/activation of Annex D. The Facilitating Base Hospital may also exercise this option. The Sheriff's Communication Center shall notify affected agencies of these announcements as follows:

ALERT

ALERT FOR ANNEX D shall be announced upon report of an event or potential event that is suspected (but unconfirmed) to constitute a mass-casualty incident which exceeds the capabilities of (1) the immediately available emergency response contingent, or (2) the patient care capabilities of proximate medical facilities.

ACTIVATION

ACTIVATION OF ANNEX D shall be declared under the following conditions:

1. A confirmed event has occurred that is a mass-casualty incident which exceeds the capabilities of the immediately available responding emergency contingent, or the patient care capabilities of proximate medical facilities.
2. An event is imminent, or has occurred, of such magnitude in a populated area that extensive casualties are inevitable, (e.g. structure collapse, major transportation emergency, hazardous materials release, infectious/communicable diseases outbreak or public health emergency).
3. Notification from cognizant authority that a disaster, local or general, is imminent or has occurred, which requires mobilization of the emergency organization and indicates the expectation that extensive casualties will result.
4. Notification from cognizant authority that a significant number of casualties

from outside the Operational Area are expected to be brought into the Operational Area via the State Mutual Aid System or the National Disaster Medical System (NDMS) (e.g., casualties from domestic or international war).

TERMINATION

TERMINATION OF ANNEX D shall be announced at such time that the situation has stabilized, and operations under the mass-casualty annex are no longer required. In general, patients have been transported or are en route to definitive care, and the event is de-escalating.

II. Organization

The operations described in this Annex address levels of disaster management from the scene to medical receiving facilities, Field Treatment Sites (FTS's), First Aid Stations (FAS), and the EOC. The plan enables agencies involved in the medical response and their respective roles to provide for an effective disaster medical system.

At the Scene

1. The authority for the management of the scene of an emergency shall rest in the appropriate public safety agency having primary investigative authority.
2. When primary investigative responsibility is with a law enforcement agency, that agency assumes the scene manager role. This role entails overall function and management of the scene but does not imply internal direction or manipulation of other responding agencies. This role includes management of scene safety.
3. The local fire department assumes the role of Incident Commander or partners with other disciplines (Law, Medical) as a Unified Command under the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) criteria and manages medical operations within the statewide fire management system known as the Incident Command System (ICS). The Mass-Casualty Branch operates as part of the ICS under the Incident Commander. As mass-casualty incidents overwhelm the initial responding resources, the Incident Commander delineates and expands operational procedures. This system assures that emergency pre-hospital care is provided to victims and aims to aims to prevent further injury to victims, the public and public safety personnel. The expansion and contraction of this operation is done in accordance with California Firescope, Field Operations Guide (ICS 420-1).
4. The medical organizational structure is designed to utilize all aspects of emergency medical service response resources, including on-scene physician medical direction.

Emergency Operations Centers (EOC)

City EOCs

Each city has a central facility designated as an EOC from which disaster operations are coordinated. City plans may call for a medical liaison representative to be present when their EOC is activated. In each city, the City Manager is designated as Director of Emergency Services, by ordinance, and manages emergency operations from the EOC.

County/Operational Area EOC

A. The County/Operational Area EOC serves the same function for the county as the city EOCs for their cities with the County of San Diego Chief Administrative Officer (CAO) serving as Coordinator of Emergency Services. The OA EOC is also used as the central point for resource acquisition and allocation as well as coordination.

B. The medical section of the EOC (Figure 1) is normally activated when the EOC is activated based on the operational need. It is staffed by pre-designated emergency medical personnel. The section coordinates the emergency medical response for the Operational Area. The EOC medical staff serves as medical advisor to the CAO, as well as makes decisions about resource allocation, priorities, and other medical matters.

C. Chief Administrative Officer (CAO) - directs, or coordinates, the emergency services organization and the emergency management program. In a disaster located entirely within the County unincorporated area, the CAO directs emergency operations. In a disaster involving more than one jurisdiction, the CAO serves as coordinator of emergency operations.

D. Director, HHSA - reports to the CAO and is responsible for policy decisions involving operational and logistics disaster health services.

E. Public Health Officer – Reports to the CAO and is responsible for public health related decisions to protect the health and safety of the community.

F. EMS Chief - reports to the Public Health Officer, and in consultation with the EMS Medical Director, is primarily responsible for directing the medical response and EMS system operations for the Operational Area. The EMS Chief assesses the EMS system problems, identifies and anticipates the resources needed, and allocates the resources accordingly. If medical mutual aid is needed, the EMS Chief makes requests to the Regional Disaster Medical/Health Specialist/Coordinator (RDHMS/C) via the Medical and Health Operational Area Coordinator (MHOAC) in accordance with the state guidelines, and advises the EMS Medical Director of medical mutual aid status. In public health events, the EMS Chief is responsible for implementing the directives of the Public Health Officer. Other duties include coordinating and providing support to medical activities at the disaster scene(s), Field Treatment Sites, and First Aid Stations. These activities include the coordination of requests for Triage/Treatment Teams, transportation coordination and liaison with Red Cross, Hospital Association, Ambulance Association, rescue teams, and the San Diego Blood Bank.

G. EMS Medical Director – The EMS Medical Director is an alternate position,

necessary during a disaster that has a medical component. This position is a liaison between EMS and the County Operational Area Ops section/division, and may act as the incident medical director. Prehospital personnel work under that physician's license.

H. Medical & Health Operational Area Coordinator (MHOAC) - Reports to the EMS Chief and EMS Medical Director, and is responsible for the disaster medical operational functions within the Operational Area (OPAREA), including:

1. Providing authorization and direction for activation of the medical/health branch of the operational area EOC and ensuring management systems are in place for managing the Medical/Health Branch of the Operational Area EOC.
2. Coordinating the procurement and allocation of public and private medical, health and other resources required to support disaster medical and health operations in affected areas.
3. Communicating requests for out-of-county assistance to and responding to requests from the Regional Disaster Medical Health Coordinator (RDMHC) or Regional Disaster Medical Health Specialist (RDMHS).
4. Developing a capability for identifying medical and health resources, medical transportation, and communication resources within the Operational Area.
5. Maintaining liaison with the Operational Area Coordinators of other relevant emergency functions, e.g., communications, fire and rescue, law, transportation, care and shelter, etc.
6. Ensuring that the existing Operational Area medical and health system for day-to-day emergencies is augmented in the event of a disaster requiring utilization of out-of-area medical and health resources.

III. Roles And Responsibilities (Figure 2)

Affected Agencies

Prepare Standard Operating Procedures (SOP's) and functional checklists for response to a mass-casualty incident, including a system for automatic reporting of pre-designated personnel to assigned disaster posts. Participating agencies must comply with State and Federal training requirements for the effective use of SEMS and the National Incident Management System (NIMS).

Train personnel and alternates.

Maintain an active liaison with the San Diego Healthcare Disaster Council, the Unified Disaster Council (UDC), San Diego County Fire Chiefs Association (SDCFCA) – EMS Section and other Operational Area planning committees.

Maintain an active liaison with HHSA Emergency Medical Services.

San Diego Healthcare Disaster Council (SDHDC)

The San Diego Healthcare Disaster Council shall address issues that affect emergency preparedness by:

1. Encouraging the development and application of effective practices, including, but not limited to planning, education, and evaluation as they relate to disaster preparedness.
2. Promoting quality in the delivery of disaster patient/victim care services.
3. Supporting the needs of healthcare organizations/agencies while ensuring that the needs of the community are met.
4. Reviewing and recommending changes in County policies and procedures, including, but not limited to, Annex D.
5. Promoting professional interaction and collaboration with organizations and interchange of ideas among members, i.e. American Red Cross, law enforcement, fire, ambulances and the National Disaster Medical System (NDMS).
6. Liaison with state and local agencies.

County of San Diego Sheriff's Communication Center (SCC)

Provides notification of Annex D Alerts, Activations and Termination to response and incident management agencies.

Facilitates assignment of mutual aid radio frequencies and trunked radio talkgroups on the 800 MHz Regional Communications System as needed.

Can assist with radio communications planning and coordination for agencies involved.

RACES/ARES

RACES/ARES will provide back-up/redundant communications support at the scene, the hospitals, the EMS Departmental Operations Center/Medical Operations Center (DOC/MOC) and the EOC, as well as throughout the Operational Area as needed. RACES' primary communication responsibilities include Public Safety communication, whereas ARES' primary communication responsibilities include the health and welfare system.

Fire Department

1. Acts as Incident Commander or as part of a Unified Command.
2. Facilitates notification through County of San Diego Sheriff's Communications Center of the Annex D activation.
3. Establishes the ICS positions needed to mitigate the incident.

4. Provides fire fighting.
5. Provides extrication.
6. Provides rescue.
7. Triage, treatment, and transportation.
8. Provide gross decontamination operations as necessary.
9. Provides for triage and treatment of patients.
10. Maintains communications with appropriate DOC's/EOC's.
11. Coordinates air operations at the scene.
12. Coordinates patient transportation.
13. Ensures Medical Communications is established with Base Hospital.
14. Determines need for treatment teams on scene.
15. Determines the need for additional resources and orders as necessary.

Law Enforcement Agency

1. If a Unified Command structure is appropriate for management of the incident, law enforcement may have a role in the Command component**.**
2. Responsible for crowd and traffic control.
3. Assists with aeromedical or aerial support, if capable.
4. Establishes and coordinates ingress and egress routes for emergency vehicles.
5. Responsible for perimeter control.
6. Responsible for security at the scene.
7. Assists with and coordinates evacuation notifications and evacuations as directed by the IC/UC.
8. Assists with emergency transportation of blood, blood products, and other needed medical supplies, as resources are available.
9. Conducts crime scene investigations.
10. Responsible for obtaining alternative transportation resources.
11. California Highway Patrol (CHP) has the primary responsibility for the ground transport of medical teams and emergency medical supplies when resources permit.
12. The law enforcement agency with jurisdiction has responsibility for incidents occurring within their jurisdiction. If additional resources are needed, they will request and coordinate those through the Local Law Enforcement Mutual Aid Coordinator (Sheriff's Department).

Facilitating Base Hospital (Figure 4)

1. Upon activation from the Field Medical Coordinating Unit/Med Communication Leader, the base coordinates area hospital disaster response, including utilization of the regional trauma system.
2. Coordinates medical communications with Medical Communication Leaders and hospitals, and provides hospital resource information and status to the Med Comm. Leader.
3. Provides medical direction of care. During an Annex D activation, personnel deliver care under standing orders (SO). Base Hospital Orders and Base Hospital Physician Orders may become Standing Orders.
4. Activates and dispatches area Treatment/Triage Teams, as outlined in this document, when requested from the scene by the Incident Commander.
5. Facilitates use of the Regional Communication System (RCS) pre-hospital/hospital 800 MHz radio communication network.
6. In conjunction with the EMS Chief or designee, assists in coordinating community medical resources for evacuation of medical facilities.

Hospital

1. Provides care for victims from the incident.
2. Advises Facilitating Base Hospital of bed capacity and other status information.
3. Provides Field Treatment Sites (FTS)/CCP with medical staff when/if staffing permits.
4. Provides Treatment/Triage Teams when/if staffing permits, if the Incident Commander (IC) requests.
5. Provide care for victims from the incident as appropriate in a primary care setting.
6. Advises the Council of Community Clinics (CCC) and EMS on triage capability, non-urgent care as well as current victim numbers.
7. Provides volunteer physicians, nurses and other staff when/if staffing permits.
8. Hospitals shall maintain up to date evacuation plans (as required by the Joint Commission).

Hospital Association of San Diego and Imperial Counties

1. Assists with coordination of hospitals (in EMS Departmental Operations Center/Medical Operations Center [DOC/MOC]).
2. Provides current hospital resource directory.
3. Provides staff to EMS DOC (MOC) upon request.

Council of Community Clinics (CCC)

1. Serves as a communication liaison between the County of San Diego and community health centers.
2. Provides current emergency contact information for key leadership.
3. Provides staff to EMS DOC (MOC) upon request.

Ambulance Agencies/First Responders

1. Upon request, will provide appropriate personnel to staff role or position under ICS structure.
2. Coordinates medical communications at the scene.
3. Triage, treatment, and transportation.

Ambulance Association (Private Ambulances)

1. Coordinates private industry ambulance resources (County Ambulance Coordinator).
2. Provides staff to EMS DOC (MOC) upon request.

Aeromedical

Provides aeromedical assistance, which may be in the form of treatment, Triage Teams, or transportation, as requested.

County of San Diego, Emergency Medical Services (EMS), Local Emergency Medical Services Agency

1. Writes and updates the Mass-Casualty Operations Annex and any other medical emergency plans and procedures.
2. Provides staff to the SDHDC, San Diego County Fire Chiefs Association (SDCFCA) – EMS Section and other planning and response committees for assistance in coordinating area exercises.
3. Coordinates disaster medical operations within the Operational Area.

4. Coordinates the procurement and allocation of the medical resources required to support disaster medical operations.
5. Coordinates the transporting of casualties and medical resources to health care facilities, including FTS's, within the area and to other areas, as requested.
6. Develops and organizes a system for staffing and operation of FTS's and Disaster Support Areas which can include Clinical Disaster Service Workers (CDSW).
7. Requests and responds to requests from the Regional Disaster Medical/Health Coordinator (RDMHC) or Regional Disaster Medical/Health Specialist (RDMHS) for disaster assistance.
8. Develops and maintains a capability for identifying medical resources, transportation, and communication services within the Operational Area.
9. Maintains liaison with the Red Cross, volunteer service agencies, Clinical Disaster Services Workers (CDSW), and other representatives within the Operational Area.
10. Maintains liaison with the coordinators of other emergency functions such as communications, fire and rescue, health, law enforcement, military and traffic control, transportation, care and shelter, etc.
11. Coordinates and provides support to medical activities at the scene.
12. Assists with contacting and coordinating critical incident stress management providers through County Behavioral Health Services.
13. Participates in the development and planning of operational area exercises/drills.
14. EMS and the Healthcare Disaster Council maintain an Hospital/Healthcare EOC contact list that is updated monthly or as needed.
15. Activates and manages the EMS DOC (MOC).
16. Provides staff to OA EOC .

Public Health

1. The overall goal of Public Health disaster operations is to minimize loss of life and human suffering, prevent disease and promote optimum health for the population by controlling public health factors that affect human health, and by providing leadership and guidance in public health disaster related activities.
2. The overall objectives of Public Health disaster operations are to:
   A. Provide preventive health services.
   B. Coordinate health-related activities among other local public and private response agencies or groups.
   C. Advise in the rapid assessment or evaluation of disease or exposure

potentially related to Bioterrorism or public health threats of uncommon origin.

D. Has primary responsibility for the activation, organization, and staffing of mass medical care in shelters.

E. Provides staff to the Operational Area EOC.

County of San Diego Department of Environmental Health (DEH) – Hazardous Materials Division

1. Provides specialists to perform inspections, agent identification, and assess conditions at designated treatment/triage, first aid stations, or FTS's.
2. Provides hazardous materials assistance from the Hazardous Materials Division (Haz-Mat).
3. Provide technical assistance (decontamination) in conjunction with the City of San Diego's Hazardous Materials Response team to Emergency Department staff for incidents involving self-referral victims or victims transported from an incident that may be contaminated with hazardous materials.

Public School Districts

Coordinate with EMS in the designation of schools as FTS's/CCP and First Aid Stations.

American Red Cross San Diego/Imperial Counties Chapter

1. Upon request and if available, American Red Cross disaster operations San Diego/Imperial Counties Chapter will open First Aid Stations and staff them with HHSA personnel and trained ARC volunteers.
2. HHSA may provide personnel to American Red Cross (ARC) Mass Care Centers and/or First Aid Stations.
3. Upon request, from DHHS or designee blood and blood products are made available for disaster victims through the nearest Red Cross regional blood center under separate agreement with the American Red Cross Blood Services Division.
4. Serves as the central point of contact for victim information in a mass casualty incident (MCI).
5. Clinical Disaster Service Workers i.e. Medical Reserve Corps may provide care in ARC First Aid Stations in conjunction with HHSA personnel and trained ARC volunteers.

San Diego Blood Bank

1. Mobilizes resources to cope with disaster needs, according to its disaster plan.
2. Provides blood in coordination with American Association of Blood Banks (AABB), America's Blood Centers (ABC) and California Blood Bank Society (CBBS) to designated disaster treatment facilities/locations.
3. Performs the duties of the Southern California - CBBS Area Emergency Operations Center (AEOC) as outlined in the CBBS Disaster Response Plan.

County of San Diego, Office of Emergency Services (OES)

1. Assists with medical mass-casualty planning and training.
2. Coordinates efforts to obtain resources, both within and outside of the Operational Area, including supplies and logistical support.
3. Requests/obtains military assistance in accordance with military plans and procedures.
4. Activates and manages the Operational Area EOC.
5. Serves as Operational Area Coordinator for mutual aid other than fire, law enforcement, medical and medical examiner.
6. Assists with recovery efforts, particularly in obtaining State and Federal reimbursement funds.

San Diego County Behavioral Health Services (SDCBHS)

1. Provides on-scene defusing and post-incident debriefings. Request SDCBHS support via Sheriff's Communications Center (SCC), the County EMS Duty Officer or HHSA DOC.
2. Develops emergency/disaster specific response and recovery activities based on the nature and impact of the event.
3. Develops a network of behavioral health disaster responders that include County staff and staff from behavioral health contract providers. Maintains and regularly updates the roster of these personnel.
4. Responds to requests for critical incident support by arranging for and conducting debriefing of the impacted emergency workers by a team composed of behavioral health professional(s) and peer members.
5. Responds to requests for on-scene support by activating a behavioral health team to respond to the Emergency Command Post and/or Rehab site for rapid defusing service. Most public safety responder agencies have their own disaster mental health staff either through internal means or external contracted agreements. Behavioral Health Services will provide first line or augmented services as requested.

6. (See Annex M for more details.)

Clinical Disaster Workers / Medical Reserve Corps (MRC)

Clinical Disaster Service Workers (CDSW): It is the policy of the County of San Diego, Health and Human Services Agency (HHSA), that upon the orders of the Public Health Officer (PHO), the Medical/Health Branch Manager at the EOC, or the EMS Duty Officer through the EMS DOC (MOC), will activate Clinical Disaster Service Workers (CDSW) volunteers during an event in which local established clinical resources are exceeded.

San Diego County Medical Society

1. Assist in notification of Physicians in San Diego.
2. Assist in obtaining Physician volunteers.

State

1. Responds to requests for resources from the San Diego County Operational Area (OES).
2. Coordinates medical mutual aid within the State.
3. Coordinates the evacuation of injured persons to medical facilities throughout the State.
4. Assists the San Diego County Operational Area in recovery efforts.
5. Coordinates and maintains directory of medical personnel statewide through the Disaster Health Volunteers Program.

National Guard

1. Provides support for field treatment of casualties.
2. Provides evacuation of casualties to medical facilities.
3. Provides communication and logistics support for the medical response.
4. Provides chemical and biological response capabilities.

Federal Government

1. As shortfalls occur in State resources, Federal agencies make their resources available, coordinated by the Federal Emergency Management Agency (FEMA) or through the Department of Homeland Security (DHS).
2. In a major disaster, the National Disaster Medical System (NDMS) may be activated, and patients from this Operational Area may be sent to other counties and states for treatment.

3. Federal Military

   A. Provides support such as supplies, equipment, ground vehicles (trucks), personnel, helicopters, and sites for disaster support areas.

   B. Provides air-sea lift.

4. Disaster Medical Assistance Teams (DMAT)

   A. DMAT San Diego CA-4 is one of 90 Disaster Medical Assistance Team's throughout the U.S. that is a component with the National Disaster Medical System (NDMS).

   B. DMAT CA-4 is part of a national response system to augment the local EMS and healthcare system when local and state agencies require outside Federal assistance.

   C. A DMAT may be activated through NDMS and Emergency Support Function (ESF) #8 via request to the State of California EMSA, or to the Emergency Support Function (ESF) #8 at the EOC.

   D. A DMAT can perform the following:

   E. Field Treatment Site(s) (FTS).

   F. Regional Evacuation Points (REP).

   G. Patient Reception Points (PRP), when the hospital bed component of NDMS is activated.

   H. Hospital staff relief or augmentation.

   I. Shelter care.

   J. Mass prophylaxis.

   K. DMAT San Diego CA-4 will provide a team member if requested to advise the EMS DOC (MOC) on possible NDMS resources and the capabilities of other DMAT's and specialty teams.

   L. Other response teams available from the National Disaster Medical System (NDMS) are:

      1. DMORT – Disaster Mortuary Operations Response Team.
      2. Mental Health Specialty Teams - for large scale Critical Incident Stress Debriefing.
      3. Burn Specialty Teams.
      4. Mine Rescue Specialty Team.
      5. FEMA Urban Search and Rescue (US&R) Response System
      6. The FEMA Urban Search and Rescue (US&R) Response System development is based upon providing a coordinated response to disasters in the urban environment. Special emphasis is placed on the capability to locate and extricate victims trapped in collapsed buildings, primarily of reinforced concrete construction. The task

force functional organization and associated terminology are predicated on, and will operate within, the National Interagency Management System (NIMS). San Diego's US&R Task Force - 8 is coordinated by the San Diego Fire–Rescue Department (SDFD).

Additional information can be found in Annex B and Annex P.

Metropolitan Medical Strike Team (MMST)

The San Diego Operational Area Metropolitan Medical Strike Team (MMST) is available to respond to Weapons of Mass Destruction (WMD) incidents that involve Chemical, Biological, Radiological, Nuclear or Explosive (CBRNE) agents. The team consists of medical, fire service, law enforcement and public health personnel in addition to environmental and hazardous materials specialists. They are trained and outfitted to perform field level response efforts for the consequences of the terrorist use of weapons of mass destruction. This team forms the technical nucleus of a comprehensive response capability to NBC terrorism. It includes specialized personnel to direct and coordinate immediate response, mitigation and recovery operations at the incident scene. Additional information can be found in Annex B and Annex P.

IV. Functions

Notification

There is a two-tiered system of medical disaster notification in the Operational Area. This system, "Alert" and "Activate", allows hospitals, transporting agencies, and other components of the emergency medical system to prepare for mass-casualty incidents. This system can be initiated at either of the tiers, depending on the circumstances, by the field Incident Commander, the Medical Coordinating Unit, or the Facilitating Base Hospital.

Alert

When a mass-casualty incident is suspected, but not confirmed, the affected agencies/health care providers are notified of an ALERT. At this point, designated hospitals and agencies only consider notifying their personnel and making other necessary preparations.

Activate

The Incident Commander or his/her designee shall notify their dispatch center to Alert/Activate Annex D. This dispatch center then contacts the County of San Diego Sheriff's Communications Center (SCC) and requests the Alert/Activation of Annex D. SCC then makes the necessary notifications. Medical personnel at scene will contact the Facilitating Base Hospital at earliest opportunity and advise of the incident and that an Annex D Alert/Activation has been declared. The following agencies will be notified by the Sheriff Communication Center *(*SCC) of an

activation/alert, and will be given pertinent information (such as the nature of the emergency, the location and the number of dead or injured). (Figure 3)

1. County Ambulance Coordinator
2. Emergency Medical Services (EMS) – Duty Officer
3. Office of Emergency Services (OES) – Duty Officer
4. ARES: Amateur Radio Emergency Service

Upon notification, agencies should follow their Standard Operating Procedures (SOP) for activation, and respond if requested. Once the initial notification of the lead agencies is made through SCC, further notification activities take place:

1. Designated hospitals notify their Treatment Teams and stand-by staff if requested by IC.
2. County Ambulance Coordinator notifies other ambulance companies as needed and coordinates resources.
3. EMS notifies the EMS Medical Director, the local Medical Health Operational Area Coordinator (MOHAC), Regional Disaster Medical/Health Specialist/Coordinator (RDMHS/C), if needed, and other medical/health staff as necessary.
4. The EMS Chief or designee, to include the EMS Duty Officer, establishes contact with SCC and confirms notification of the American Red Cross (ARC) and San Diego Blood Bank, if necessary.
5. OES notifies the Chief Administrative Officer (CAO), California Emergency Management Agency (CAL-EMA), and EOC staff, if needed.

Communications

1. Hospitals in the San Diego County Operational Area are on the Regional Communications System (RCS). Please refer to the Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, Annex I, for more information regarding the Regional Communications System (RCS).
2. Prehospital personnel responding to the mass-casualty incident will be assigned to a common talk group. This talk group is to be used by the medical transportation coordinator to direct incident assigned resources. This talk group is assigned by the local communication center directing operations. This identified talk group should be available to responders county-wide.
3. Upon notification of an Annex D Alert or Activation, the County of San Diego Sheriff's Communications Center (SCC) will assign a county-wide talk group to the County Ambulance Coordinator for the purpose of coordinating the provision of medical transportation resources to the incident.

Multiple Site Incidents

In the event of a multiple site mass-casualty incident, communications can be handled by the base hospital, EOC level activation or EMS DOC (MOC) Area Command. Hospitals participating in the event and the Medical Communications Coordinator at the scene can be on the same talk group as the Facilitating Base Hospital. In the event of an Operational Area wide disaster, the EOC may be activated and acts as a clearinghouse for incoming information and coordinates resource allocation at disaster sites. The EMS DOC (MOC) may operate as the Area Command for Medical Communication. Non-affected facilities will be directed to assist in staffing at the EMS DOC (MOC).

Back-up Communications

A. See the San Diego County Mutual Aid Radio Plan.

B. Amateur radio operators may be called upon to act as back-up communicators at the scene, hospitals, first aid stations, blood banks, mass care centers, American Red Cross Service Centers, San Diego OA EOC , and the EMS DOC (MOC).

Incident Command

The Incident Command System (ICS) is used to provide a management structure and system for conducting on-scene Mass-disciplinary operations (in this case, a mass-casualty incident that involves concurrent tactical field interactions between fire, law enforcement, and medical personnel). The ICS, because of its standardized organizational structure and common organizational and operational terminology, provides a useful and flexible management system that is particularly adaptable to incidents involving Mass-jurisdictional response such as mass-casualty incidents. ICS provides the flexibility to rapidly activate and establish an organizational structure around the functions that need to be performed. For emergencies, the Field Operations Guide (ICS 420-1) and any future revisions shall be utilized.

The ICS organizational structure develops in a modular fashion based upon the nature and size of an incident. The organization's structure is built under the authority of the Incident Commander or Unified Command structure, consisting of the most qualified/appropriate fire, law and/or medical officers on scene. The specific organization structure established for any mass-casualty incident is based upon the management of the incident and personnel available to fill functional positions.

1. Unified Command/Incident Commander - coordinates all incident activities including the development and implementation of strategic decisions and approves the ordering and releasing of resources.

2. Operations Chief - activates and supervises the organization elements and is responsible for the management of all operations at the scene.

Mass-Casualty Branch Positions

First arriving medical personnel - makes the preliminary medical assessment of the overall incident.

Mass-Casualty Branch Director - establishes command and controls the activities within the Mass-Casualty Branch in direct liaison with the Incident Commander under the Operations Section Chief.

Medical Group Supervisor - controls triage management, treatment, and coordination of all casualties.

Medical Supply Coordinator - identifies, collects, and distributes supplies available at the scene and is responsible for obtaining additional supplies (from hospitals or other sources).

Triage Unit Leader - ensures triage on-scene and designates casualties accordingly.

Treatment Unit Leader - ensures assessment of patients and treatment of casualties. Directs movement of patients to loading locations.

Patient Transportation Unit Supervisor - communicates with the Mass-Casualty Branch Director and closely coordinates with the Medical Group Supervisor; may be responsible for communicating with helicopters, ambulances from a variety of different agencies, and the staging area. As personnel become available, the Patient Transportation Group Supervisor fills and supervises the following positions: Medical Communications Coordinator and the Ambulance Staging Managers.

Medical Communications Coordinator - maintains communications and coordinates information with Facilitating Base Hospital(s) to ensure patient transportation and destinations.

Ambulance Staging Managers - manage air and ground ambulance/emergency vehicle staging areas.

Mass-Casualty Branch Implementation

Once command is established, the implementation of the Medical Group is determined by the medical size-up. This assessment is conducted by on-scene medical personnel designated by the Incident Commander. The medical size-up includes the following:

Determine the nature of the incident and special hazards.

Estimate number of victims and severity of injuries.

Estimate additional medical resources needed.

Identify access routes for incoming EMS units.

Identify locations for triage, treatment, ambulance/bus loading, and staging areas.

Notify the County of San Diego Sheriff's Communications Center (SCC) if this has not been done or if the first medical coordinating unit is alone on scene.

Determine the need to activate this Annex.

All of these actions are coordinated with the Incident Commander (IC). Once the medical size-up is completed, the first medical unit assumes its role in the ICS Mass-Casualty Branch.

On Scene Operations

The location of a mass-casualty incident will determine, to a large extent, how the scene is set up.

The Incident Commander establishes a staging area for all incoming emergency vehicles. Personnel and apparatus are then called from the staging area to the scene in a controlled and organized manner.

Mass-Casualty Branch personnel need to be visibly and clearly identified, by positions, so that they can easily be identified in a crowd of rescuers.

Patients are collected into a single area to provide maximum care with limited resources. They are placed in the treatment area according to the severity of their injuries: immediate patients (I) on one side; delayed patients (II) on another. Minor patients can be directed to a separate location.

The Incident Commander and the Mass-Casualty Branch Director determine whether agencies such as the Red Cross are needed at the scene and/or at First Aid Stations for initial care of the "Minor" (walking wounded).

Triage / Treatment

Triage

Triage and medical care will be initiated under Protocol S-140.

With the initiation of the mass-casualty plan one immediate and one minor patient may be immediately transported to area hospitals.

For purposes of patient tracking during radio reports individuals will be identified by the last four (4) digits of their triage tags.

Triage is the process of sorting the injured on the basis of urgency and type of injury presented, so they can be transported to medical facilities equipped for their care. The Medical Group Supervisor has the overall responsibility for coordinating triage management and treatment of casualties.

Primary triage is the first sorting of victims at the scene without moving them. This phase of triage determines the order of evacuation from the field. Primary triage utilizes the Simple Triage

and Rapid Treatment (START) criteria. Ideally, primary triage is done by Emergency Medical Technician (EMT) personnel.

During initial triage, victims with special resource needs shall be identified, i.e. burns, trauma, and pediatric patients. These patients should be directed to the most appropriate facility given event circumstances. Special resource identification for patients can be communicated with the facilitating base hospital during patient radio reports.

Secondary triage is the second phase of sorting victims and is done in the triage/treatment area. At this time a victim's primary triage category may be changed, based on further assessment. Stabilizing treatment may be initiated while awaiting transportation; however, transport should not be delayed for treatment.

Tagging of victims is accomplished using the following categories and corresponding colors:

1. Immediate (Red tag) - most in need of care and should receive first priority for evacuation.
2. Delayed (Yellow tag) - will need hospital care, but can wait until the more critically injured have been stabilized and transported.
3. Minor (Green tag) - these patients have been referred to as “walking wounded”. They may need first aid, but may or may not need transportation.
4. Dead/Non-Salvageable (Black tag) - once tagged, dead patients will be placed in a morgue or separate area with a medical or security staff present to oversee the area. Non-Salvageable (expectant patients) will be moved to a separate area, monitored and provided comfort care as soon as possible by medical staff.
5. Contaminated (side tag) on these patients are to be considered as potentially exposed to chemical, radiological or biological agents or toxins. These patients, per procedure, are decontaminated at the scene. The tag indicates initial exposure.

Treatment

The treatment rendered in the field is dependent upon personnel and supplies. Treatment at the scene is generally limited to stabilization, treatment of shock, and a continual reassessment of conditions, while awaiting transport. Transport should not be delayed for purposes of treatment.

The Medical Group Supervisor has the overall responsibility for field treatment.

Treatment Teams

Primary - Advanced Treatment Teams, consisting of a licensed physician, nurse, and a recorder can be assigned from hospitals and local community clinics. CDSW’s, Public Health Nurses and members of the San Diego Medical Reserve Corp (MRC) could also be requested to assist these teams at the direction of the San Diego County EMS/PHS. When requested, the teams are transported by ground or through the use of air resources, which may include the California

Highway Patrol (CHP), military ground/air assets or other aerial assets from local or regional law enforcement and/or fire agencies. Upon arrival at the scene, the Team reports to the Incident Commander (IC) for assignment within the Mass-Casualty Branch or Group.

Secondary - Treatment Teams consist of a physician and two nurses, who report either to the scene or a Field Treatment Site, as requested.

1. At the scene, the team reports to the Mass-Casualty Branch Director.
2. At the Field Treatment Site (FTS), the team physician assumes medical control. The team coordinates with other support personnel and practices austere medical treatment, to facilitate casualty evacuation.

Transportation

The coordination of ambulance transportation from the scene to local medical facilities (Transportation Unit Supervisor), and from damaged to operational medical facilities, is the responsibility of both the jurisdiction's providing agency, for medical units, and the County Ambulance Coordinator. The Transportation Unit Supervisor can increase to a Group position if needed

The County Ambulance Coordinator, in coordination with the EMS DOC (MOC), Fire Department Officials and other Public Safety Agencies, assumes direction of prehospital transportation resources for the purposes of evacuation of medical facilities.

Ambulance transportation includes the equipment and personnel to provide Basic Life Support (BLS) and Advanced Life Support (ALS) services.

Basic Life Support is a set of non-invasive medical skills including cardiopulmonary resuscitation, hemorrhage control, splinting, bandaging, immobilization, and extrication.

Advanced Life Support includes basic life support skills plus intravenous therapy, parenteral drug administration, cardiac monitoring, cardiac defibrillation and cardioversion, endotracheal intubation, and any additional skills that are locally defined.

Once the Mass Casualty Plan has been activated, patients who have received ALS care in the field, (e.g. IV, advanced airway or medication) may be transported without being accompanied by ALS personnel. BLS personnel may accompany these patients to the hospital.

As casualty transportation resources will be in great demand, casualties are transported on the basis of medical triage priorities. Patients requiring immediate transportation will have priority for ground or air transportation, with other transportation (e.g. buses, trucks, and automobiles) used for the minimally injured.

At the Scene

Based on hospital capability inventories, transportation resources and severity of injuries, the Patient Transportation Group Supervisor has the overall responsibility for the coordination of

patient transportation at the scene.

Transportation Resources

There currently exist two systems of ambulance transportation in the Operational Area; (1) local jurisdiction's medical response system and, (2) in a mass-casualty situation, supplemental private ambulance resources which may be requested through the County Ambulance Coordinator, by the Incident Commander.

Jurisdictions

Each jurisdiction has a varied amount and type of medical units. In most jurisdictions, the direction and administration of medical units is under the Fire Department. However, in some areas of the Operational Area, County Service Areas (CSA) and San Diego County, EMS-contracted transporting agencies have response capability.

Private Ambulance Resources

Private industry ambulance response is directed by the County Ambulance Coordinator. Upon notification from SCC, the County Ambulance Coordinator:

1. Establishes contact with IC dispatch center
2. Coordinates pre-arrival activation and demobilization of Ambulance Strike Teams at the request of the EMS DOC (MOC).
3. Notifies participating ambulance companies
4. Polls agencies' available resources to include:

    - Number and type of units available.
    - Units already responding to the incident.
    - Number and type of units that could be activated.
    - Number of available staff that could be used to activate backup units from around the Operational Area Number and type of units for back-fill of depleted areas as requested from Operational Area assets.

Transporting Responders Responsibilities

Upon notification, transport units ascertain the exact location of incident staging areas and access routes. Special hazards or road closures may necessitate specific routing instructions.

Upon arrival at the scene, units report to the ambulance staging area unless otherwise directed by the Staging Area Manager.

Ambulances are systematically sent into the patient loading area by the Staging Area Manager to avoid congestion of the scene. Ambulances are assigned patients and destination as directed by the Patient Transportation Group Supervisor as determined by the Medical Communications Coordinator.

As minimal stabilization is administered at the scene to affect transportation in a timely fashion, it is essential that continued medical care be provided in route.

Hospital communication is not required from transporting units, as the Medical Communications Coordinator at the scene is responsible for this function. When patient turnover to the hospital is completed, and the unit has been requested (by the Patient Transportation Group Supervisor) to return to the scene, requested personnel or supplies may be transported back to the scene by that unit.

Field Treatment Sites/First Aid Stations

Field Treatment Sites (FTS)

FTS are designated sites for the congregation, triage, prophylaxis/ immunization, austere medical treatment, and stabilization for evacuation of casualties during a major disaster or large-scale public health emergency. They are an extension of the disaster medical response operations when the evacuation of casualties is substantially delayed by depletion of resources, road closures, damage to hospitals, or when sites are needed to provide community based mass prophylaxis/immunization operations, etc.

Medical FTS are utilized to provide only the most austere medical treatment, directed primarily to the moderately/severely injured or ill, who will require later definitive care and who have a substantial probability of surviving until they are evacuated to other medical facilities. FTS should not be viewed as first aid stations for the minimally injured, although provisions may be made to refer them to a nearby site for first aid. Nor should FTS be viewed as only short-term staging areas because evacuation of casualties from the FTS may be delayed due to limited availability of transportation. Given the uncertainty of the flow of casualties, the availability of supplies and personnel, and the timeliness and rate of casualty evacuation, managers of FTS must be cautious in the allocation of resources (especially during the first 24 hours of operation).

Designation of FTS

The designation, establishment, organization, and operation of FTS are the responsibility of County government. Regional and state resources will become available to resupply and augment FTS operations, but are generally unavailable to activate a FTS during the initial response phase.

In selecting FTS locations, consideration is given to: proximity to areas which are most likely to have large numbers of casualties; distribution of locations in potential high-risk areas throughout the affected area; ease of access for staff, supplies and casualties; ease of evacuation by air or land; and the ability to secure the area. In collaboration with EOC, FTS sites will be designated at the time of activation by the County of San Diego Emergency Medical Services (EMS) based on the availability of appropriate structures, facilities, and supplies.

FTS Functions

FTS should be designed to perform the following tasks; not necessarily in the order indicated below.

1. Congregation and registration of casualties for efficient treatment and evacuation.
2. Triage of casualties to ensure scarce treatment and transportation resources are given to those for whom they will do the most good. Triage operations will

include use of prehospital triage tags for tracking purposes.

3. Austere medical care to ensure that the maximum number of casualties who require life saving medical care receive it.
4. Mass Immunization/Prophylaxis.
5. Casualty holding to maintain the stability of casualties awaiting evacuation.
6. Evacuation of casualties to the Disaster Support Areas (DSA) or other facilities for further medical care.
7. Support functions needed for FTS to meet medical care requirements include:

    - Communications.
    - Security and crowd control.
    - Sanitary facilities for casualties and staff.
    - Food and water for casualties and staff.
    - Logistics (equipment, supplies, inventory maintenance).
    - Administration and record keeping.

8. The ability of a particular FTS to implement these functions depends on:

    - The number and type of staff available.
    - Availability of equipment and supplies.
    - The number and severity of casualties.
    - The rapidity with which casualties arrive.
    - The speed with which casualties are evacuated.

Medical resources at FTS should be directed toward stabilization for transport and relief of pain and suffering. Supplies, personnel, and conditions will not usually allow definitive care of even minor or moderate injuries. Care is ordinarily limited to:

1. Controlling/managing airway, breathing and circulation (ABCs).
2. Splinting of fractures.
3. Maintenance or improvement of hemodynamic conditions by intravenous solutions.
4. Pain relief.

FTS Operations

The flow of casualties into a FTS is unpredictable depending on its distance from casualties, the success of public information efforts, its accessibility, and the pace of search and rescue operations.

- If delay is lengthy, reconsideration of triage of the seriously injured and a higher level of pre-hospital care at FTS may be needed.
- Supplies from outside the disaster area to the FTS may be delayed.
- Water, power, and other resources may be scarce, limiting the type of medical treatment feasible at a FTS.
- Inclement weather and other atmospheric conditions can hinder helicopter delivery of personnel and supplies and evacuation of casualties.
- Mass prophylaxis/immunization operations follow the Mass Prophylaxis Plan under the direction and discretion of Public Health Officer (PHO).

The public, fire, and police agencies are notified by Operational Area officials of the location of functioning FTS. Spontaneous volunteers will not be accepted at these locations but will be directed via the Operational Area Spontaneous Volunteer Plan.

Status reports are made by each FTS to the Disaster Medical Coordinator, describing: numbers and triage category of casualties; medical supply needs; personnel status and needs; and accessibility by helicopter and ground transportation.

Patient tracking begins at FTS, using a Patient Tracking Tag which is attached to the patient during triage operations and then this information is entered into the Quality Assurance Collection Network System (QCS). This tag remains with the patient until the final medical treatment facility is reached.

First Aid Stations

The County of San Diego Public Health Services (PHS) has the primary responsibility for the activation, organization and staffing of First Aid Stations. These stations are primarily set up for casualties requiring minimum to no medical care. If requested, and if available, the American Red Cross (ARC) will support these First Aid Stations. Both stationary and mobile American Red Cross First Aid Stations may be established in coordination with the Medical and Health

Operating Area Coordinator (MHOAC), the County Health and Human Services Agency (HHSA) and the American Red Cross.

First Aid Station*(s)* will be supervised by a Registered Nurse under the direction of a physician, and staffed by emergency first aid response teams, known as Health Services Teams (HST).

When activated, HST report to the scene and coordinate the dispatch of wounded to the American Red Cross First Aid Stations.

Additionally, and if available the American Red Cross may provide family services, psychological counseling, and spiritual support.

County Behavioral Health Services may also provide/coordinate counseling.

Hospital System

Facilitating Base Hospitals (Figure 4)

The Facilitating Base Hospital shall have the secondary responsibility of notifying the Sheriff Communication Center (SCC) of an Alert or Activation of the Mass Casualty Plan, if the Facilitating Base Hospital feels that the incident the medical coordinating unit is reporting meets the criteria for an Alert or Activation or the receiving hospitals within the Operational Area are or may soon be overwhelmed with incoming patients.

Plan Activation

Once notified by the field to "activate" this plan, facilitating base hospitals are responsible for notifying the satellite receiving hospitals in their area and trauma system hospitals to obtain the following information: (Table 1)

1. Hospital status, including essential services such as utilities, laboratory, x-ray, surgery, and bed counts.
2. Treatment Team availability for hospitals with predesignated teams if requested by Mass-Casualty Branch Director or Incident Commander. (Table 2)
3. Number of Emergency Department beds available and, if requested:

    - Number of total beds available.
    - Number of beds that could be made available through early discharges.
    - Blood inventory.
    - Number of functional Operating Rooms.
    - Number of available ventilators.
    - Availability of decontamination operations.
    - Critical resource needs both personnel and supplies.

Once the responding Treatment Teams are determined, requests for transport to the scene are made via EMS DOC (MOC) or Operational Area EOC. Transportation arrangements may be

coordinated with California Highway Patrol, Sheriff ASTREA, or other air/ground assets.

Additional areas of consideration in coordinating the area response include:

1. Adequate ambulance support en route.
2. Assistance from other EMS planning areas for response.
3. Alternate means of transportation.
4. Additional supplies and equipment.

Additional resource information is available from the resource list included in this document.

After the initial response is made and if the EMS DOC (MOC) is operating, the Facilitating Base Hospitals are also responsible for providing area updates to the Disaster Medical Coordinator at the EMS DOC (MOC).

State Medical Mutual Aid

Mutual Aid Region

The State of California is divided into six mutual aid regions. The San Diego County Operational Area is in Region VI which also includes the Mono, Inyo, San Bernardino, Riverside and Imperial Operational Areas. In the event local medical resources are unable to meet the medical needs of disaster victims, the Operational Area may request assistance from neighboring jurisdictions through the Regional Disaster Medical Health Specialist/Coordinator (RDMHS/C) or the California Emergency Management Agency (CAL-EMA) regional office. The Regional Coordinator coordinates the provision of medical resources to the Operational Area and the distribution of casualties to unaffected areas as conditions permit. In addition, a Medical Mutual Aid Plan exists in Region VI and all counties in Region VI have signed this Plan and the Medical Mutual Aid Agreement. If a state response is indicated, the Regional Coordinator functions are subsumed under the overall State medical response.

Mutual Aid Implementation

The following information is required for disaster medical mutual aid requests:

1. The number, by triage category, and location of casualties.
2. The location and helicopter accessibility of FTS.
3. Land route information to determine which FTS may be evacuated by ground transportation.
4. The resource needs of affected areas.
5. Location, capabilities, and patient evacuation needs of operational medical facilities in and around the affected area.

Information is consolidated at the Operational Area EOC and provided to the Regional Coordinator who transmits it to the Emergency Medical Services Authority (EMSA) Staff at the

Regional Emergency Operations Center (REOC) or State Operations Center (SOC). (Attachment A).

The Regional Coordinator will:

1. Coordinate the acquisition and allocation of critical public and private medical and other resources required to support disaster medical care operations.
2. Coordinate medical resources in unaffected counties in the Region for acceptance of casualties.
3. Request assistance from the Emergency Medical Services Authority (EMSA) and/or California Department of Public Health (CDPH), as needed.

Federal Medical Mutual Aid

Federal aid is normally available only upon declaration of a national disaster requested by the governor when local, regional and state assets are inadequate to cope with a situation. Upon such a declaration, the Federal Emergency Management Agency (FEMA) would set up a Disaster Field Office (DFO) with a Federal Coordinating Officer (FCO) in charge. The DFO staff would have access to resources in all 15 Emergency Support Functional areas including medical. Through California state officials, local requests for federal assistance would be submitted to the DFO.

Part of the Medical Support Functional (ESF #8) is the National Disaster Medical System (NDMS). NDMS could provide Disaster Medical Assistance Teams (DMAT) of 35 medical and support personnel with organic equipment to set up field treatment stations or to augment medical infrastructure as needed. If a DMAT team were activated to assist, it would most probably be one from another area of the country as opposed to the San Diego team. Casualty evacuation for definitive medical care (hospitals) in other areas of the country is another NDMS function. Should NDMS assistance be required, it would be requested through the DFO, normally via state officials.

Naval Medical Center San Diego (NMCSD) is the Federal Coordinating Center (FCC) for the San Diego county area. The FCC coordinates incoming regulated patients, and continues to track them within accepting facilities until discharge or repatriation.

As a hospital, in local mass-casualty disasters, NMCSD would be a full participant as specified in other areas of this plan. Should NDMS be activated to evacuate victims from San Diego, NMCSD would assist in every way possible. It would not be in charge of patient departure operations. The only defined role for Federal Coordinating Center is to liaison with Global Patient Movement Requirements Center (GPMRC) primarily through TRAC2ES web-based patient regulating system. GPMRC is the US Air Force command which would arrange/schedule transportation (primarily USAF aircraft) for evacuees.

In the event that a disaster occurs in this area, stabilized patients would be taken from the FTS to the Disaster Support Area (DSA) for transport to other counties or states. Should the Operational Area become a receiving site, this Annex could be activated to move patients to

local hospitals. As NDMS Federal Coordinating Center, NMCSD would be in charge of patient reception operations.

Medical Evacuation/Disaster Support Area (DSA)

Medical Evacuation - Medical evacuation of casualties is necessary when one or more of the following conditions exist:

Hospitals are damaged.

- Hospitals are threatened by an imminent disaster.
- The total Operational Area hospital bed capacity is overwhelmed.
-

Damaged or threatened hospitals evacuate patients to other medical facilities identified in their areas, as coordinated by the EMS DOC (MOC). FTS or First Aid Stations can be activated as the numbers and extent of injuries warrant.

In the event a major disaster severely affects the ability of the Operational Area to provide medical care, large numbers of casualties may be evacuated to medical facilities in the Region. The coordination of the medical care, triage, and distribution of these evacuated casualties is a function of the Regional FCC Coordinator and the EMS Chief or designee.

Disaster Support Area (DSA)

The designated Disaster Support Area (DSA) for San Diego Operational Area is the Marine Corps Air Station, Miramar, Thomas Brother's page 1229, C-3. The alternate DSA is Brown Field, Thomas Brother's page 1351, E-1.

The DSA is a pre-designated facility established on the periphery of a disaster area where disaster relief resources (personnel and material) are received, stockpiled, allocated and dispatched into the disaster area. A segregated portion of the facility serves as a medical staging area where casualties requiring hospitalization are transported to medical facilities in the region. A "leap frog" concept is used in evacuating casualties and providing mutual aid resources. Under this concept, casualties are evacuated from Field Treatment Sites (FTS) to the DSA and then to a distant medical facility. Mutual aid resources both personnel and supplies, are then transported to the DSA on the return trip.

Medical function responsibilities at the DSA include:

- Planning the organization and layout of the medical section of the DSA.
- Establishing procedures for patient flow.
- Directing the establishment of the medical site and implementation of patient care procedures.
- Providing orientation for personnel staffing the DSA medical function.

The DSA also serves as the site for the receipt, storage, and disbursement of medical

resources. Satellite medical operations (medical DSA) may be created by the EMSA near large pockets of casualties depending on the amount of resources available.

Organization and Support of Personnel

Physicians and other licensed medical personnel arriving at the DSA sign a log sheet listing their names, specialties, and license numbers. Medical personnel need to carry some proof of licensure with them. This information is used by the Disaster Medical Coordinator to organize medical assistance teams with appropriate skills. Each team triages and provides austere treatment to an average of 200 casualties per eight-hour shift at FTS (if needed) or at the DSA. Each team consists of:

- Two physicians with specialties in emergency medicine, surgery, orthopedics, family practice, or internal medicine.
- Four registered nurses (RNs).
- Two physician assistants or nurse practitioners. (May substitute RNs or paramedical personnel, if necessary.)
- One medical assistance personnel (dentist, veterinarian, etc.).
- Four Licensed Vocational Nurses (LVN) or nurse aides
- Two clerks.

As soon as medical personnel arrive at the DSA, they are provided with orientation material (e.g., disaster tags, triage and austere medical care guidelines, and DSA/FTS organization and operations material.

Resources

Emergency Medical Services (EMS) develops and maintains a capability for identifying medical resources, transportation and communication services within the Operational Area. Additionally, EMS coordinates the procurement, allocation and delivery of these resources, as required to support disaster medical operations.

Medical Resources

Sources of Personnel:

1. Local emergency medical services personnel.
2. Clinical Disaster Service Workers (CDSW)/Medical Reserve Corp (MRC)
3. State employed physicians and nurses.
4. Local volunteer physicians, nurses, dentists, pharmacists, veterinarians, etc.
5. Law enforcement and fire EMT personnel, if available.
6. Medical school residents and teaching staff from throughout the state.
7. Volunteers through professional societies (California Medical Association (CMA), California Nurses Association (CNA), California Ambulance

Association (CAA), etc.).

8. Nursing School students
9. Other volunteer medical personnel from throughout the state.
10. California National Guard (CNG).
11. U.S. Armed Forces.
12. Veterans Administration (VA) personnel.
13. Volunteer medical personnel from other states.

Supplies and Equipment

Medical supplies and equipment are needed for:

- Initial supply and resupply of FTS.
- Initial supply and resupply of DSA.
- Resupply of functioning hospitals in the affected areas.
- Resupply of hospitals outside the disaster area receiving casualties.

Sources of medical supplies and equipment:

U.S. Department of Homeland Security (DHS), Department of Defense (DoD), Department of Health and Human Services (HHS), and Veterans Administration (VA) (through the Federal Emergency Management Agency [FEMA]) and California Emergency Management Agency (CAL-EMA).

Blood and blood derivatives:

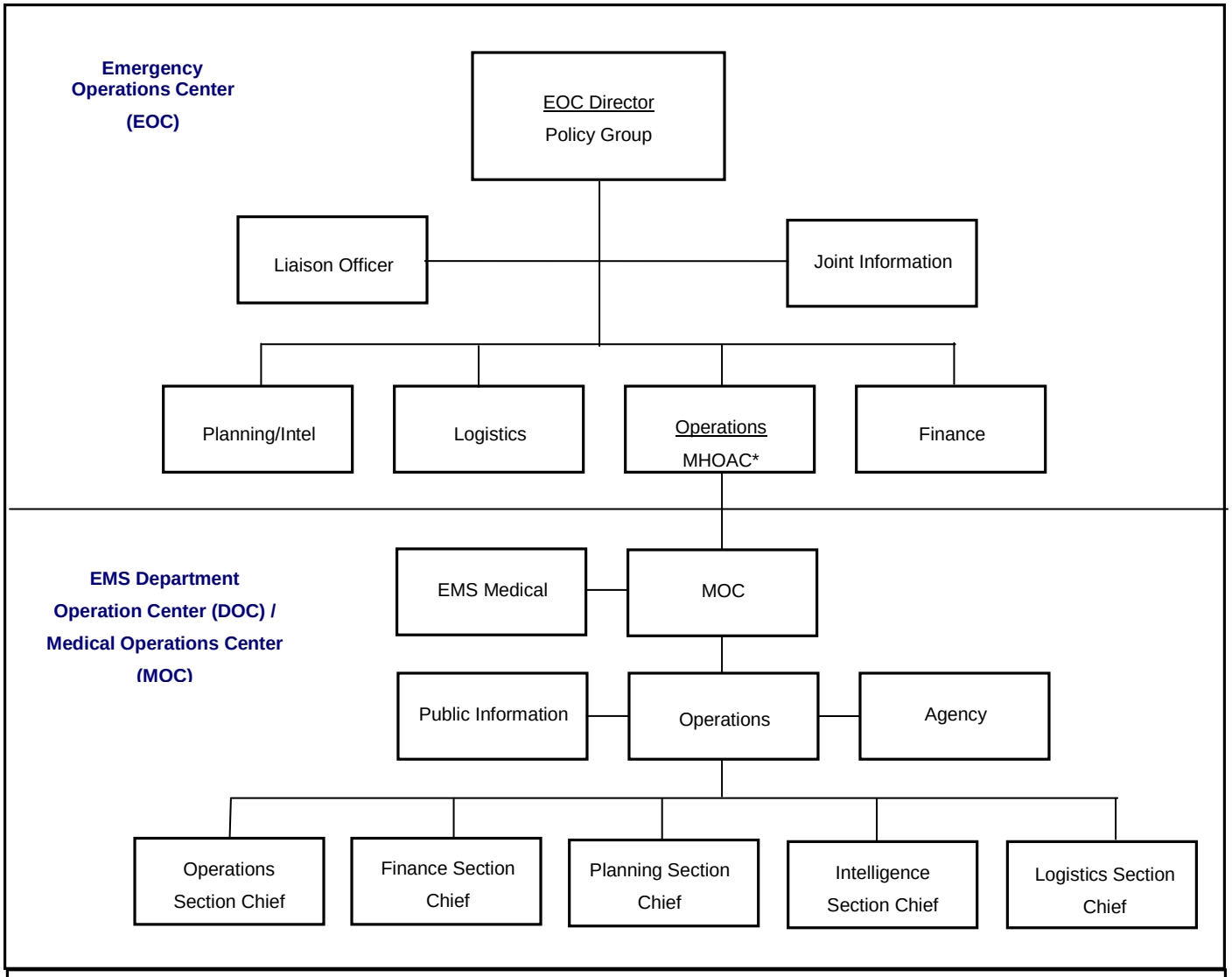
Red blood cell products, platelets, plasma and other blood products are supplied to the DSA coordinated by the San Diego Blood Bank as the regional Area Emergency Operation Center as designated by the California Blood Bank Society disaster plan.

Supplies are transported to the DSA by suitable available transportation. The State Disaster Medical Coordinator may request the provision of refrigeration trucks to act as storage facilities for the blood and blood products.

1. Personnel are requested from the California Blood Bank Society to operate a blood bank at the DSA in coordination with the National Guard Medical Brigade.
2. Since the DSA will not have resources for the storage of large quantities of blood, only a 24-hour supply is stored there.
3. Blood and blood products are used primarily at the DSA and at hospitals in the affected and reception areas. Blood should be sent to FTS only under extraordinary circumstances.

Overview: Medical Health Incident Command Framework

Figure-1: Medical Health Operations at the San Diego County EMS Departmental Center (DOC) / Medical Operations Center (MOC) and the Operational Area Emergency Operations Center.



***Medical Health Operational Area Coordinator (MHOAC):**

Is the link for resources requests of Medical & Health assets/personnel within their Operational Area (OA) and coordinates with the Mutual Aid Region VI Region Disaster Medical and Health Coordinator/Specialist (RDMHC/S) and the Southern Regional Emergency Operations Center (REOC) Medical and Health Desk for resources from other OAs, regions and the State of California.

***Agency Representatives:**

- Base Hospital Nurse Coordinator (BHNC)
- Hospital Association of San Diego & Imperial Counties (HASDIC)
- Council of Communities Clinics (CCC)
- American Red Cross (ARC)
- County Ambulance Coordinator
- San Diego County Medical Society (SDCMS)
- Skilled Nursing Facilities (SNF)

Figure 2

MASS-CASUALTY OPERATIONS RESPONSIBILITY CHART

AGENCIES	Planning, training & exercising	Notifications	Communications	Incident Command/ Scene Management	Triage & Treatment	Transportation	Field Treatment Site	First Aid Stations	Medical Evacuation	Special Resources	OA EOC	Medical Mutual Aid
All Affected Agencies	X											
San Diego Healthcare Disaster Council (SDHDC)	X											
County of San Diego Sheriff's		X	X			X						
RACES/ARES		X	X									
Local Fire Departments	X	X	X	X	X	X	X			X	X	X
Local Law Enforcement		X	X	X		X			X	X	X	
California Highway Patrol (CHP)				X		X			X			
Local Base Hospitals	X	X	X		X		X		X			
Local Hospitals	X	X	X		X		X		X			
Healthcare Association of San Diego & Imperial County			X								X	
Local Ambulance Association			X			X			X			
Aeromedical	X		X		X	X						
County of San Diego EMS	X	X	X	X			X		X	X	X	X

County of San Diego Public Health Services / Emergency Preparedness	X	X	X	X			X	X		X	X	
Public School Districts							X	X				
American Red Cross – San Diego/Imperial Counties Chapters	X							X	X	X	X	
San Diego Blood Bank			X							X		
County of San Diego Office of Emergency Services (OES)		X	X	X						X	X	X
California Emergency management Agency (CAL EMA)		X	X	X		X			X	X	X	X
California Department of Public Health (CDPH)		X	X	X	X	X	X	X	X	X		X
California Emergency Medical Services Authority (EMSA)		X	X	X	X	X	X		X	X		X
Local Military / National Guard		X	X							X		X
Federal Agencies		X	X	X						X		X
Community Health Centers					X							
Local Council of Community Clinics		X	X									

San Diego County Medical Society		**X**	**X**									

Figure 3

Annex D Notification Organization Chart

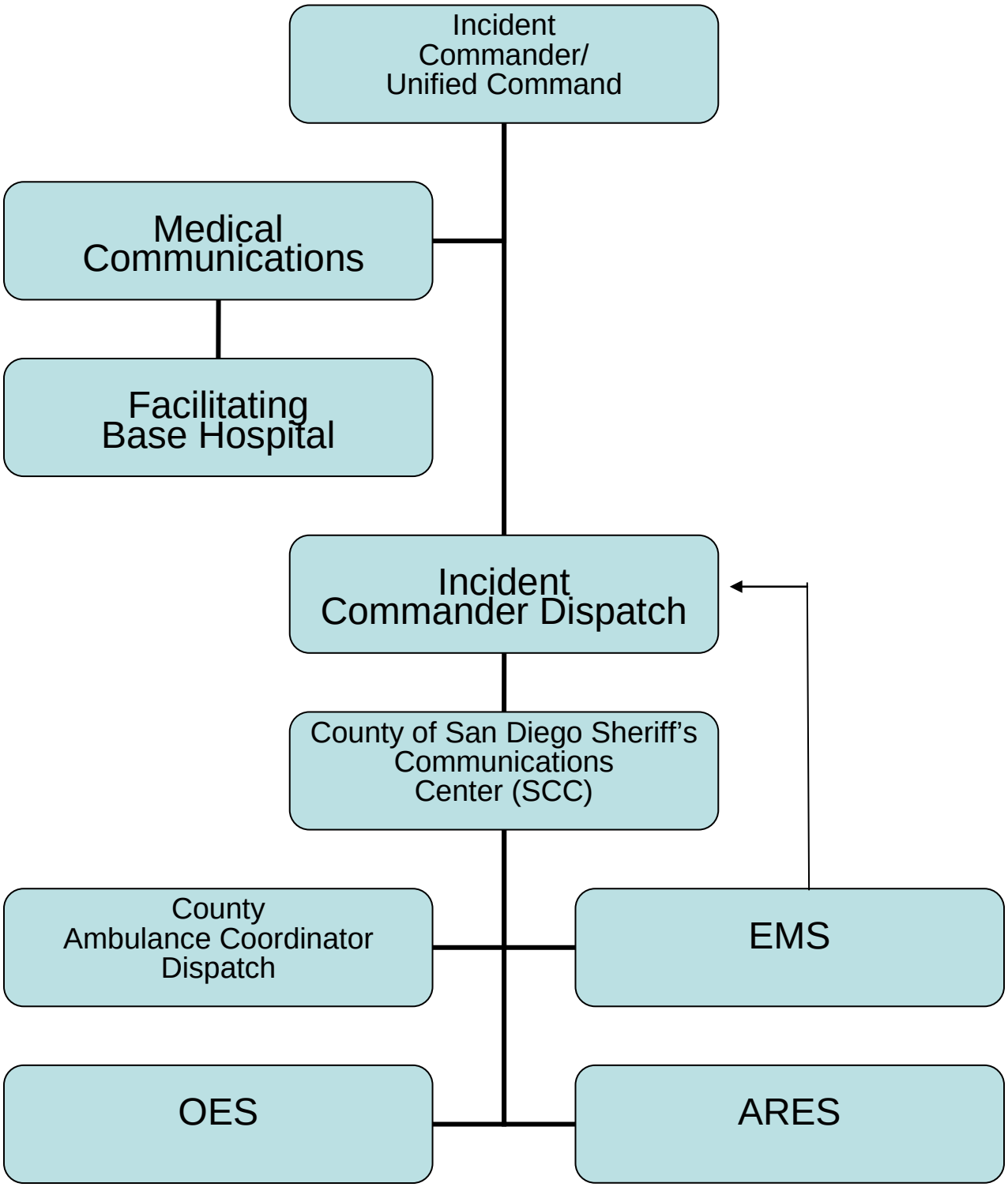
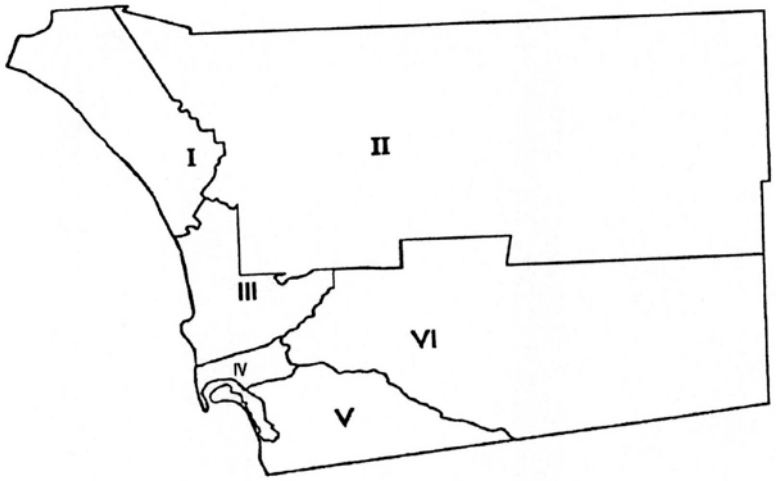


Figure 4

Base Hospitals By EMS Planning Area



EMS Planning Area	Base Hospital	Thomas Bros
I	Tri City Medical Center 4002 Vista Way Oceanside, CA 92054	1107-B2
II	Palomar Medical Center 555 East Valley Parkway Escondido, CA 92025	1130-A2
III	Scripps Memorial Hospital La Jolla 9888 Genesee Ave. La Jolla, CA 92037	1167-D1
III	Sharp Memorial Hospital 7901 Frost St. San Diego, CA 92123	1249-B5
IV & V	UCSD Medical Center-Hillcrest 200 West Arbor Dr. San Diego, CA 92103	1269-A4
IV & V	Scripps Mercy Hospital San Diego 4077 Fifth Ave. San Diego, CA 92103	1269-A5
VI	Sharp Grossmont Hospital 5555 Grossmont Center Dr. La Mesa, CA 91941	1251-A7

Table 1

San Diego County Hospitals

Hospital Name (Full)	Address	Thomas Bros	Designation*
Alvarado Hospital	6655 Alvarado Rd., San Diego, 92120	1270-D1	ED
Rady Children's Hospital San Diego	3020 Children's Way, San Diego, 92123	1249-B5	ED T
Fallbrook Hospital	624 East Elder St., Fallbrook, 92028	1027-G2	ED
San Diego Medical Center/Kaiser Foundation Hospital	4647 Zion Ave., San Diego, 92120	1249-J6	ED
Naval Hospital-Camp Pendleton	Camp Pendleton, 92055	409-A7	ED
Naval Medical Center-San Diego	34800 Bob Wilson Dr., San Diego, 92134	1289-C1	ED
Palomar Medical Center	555 East Valley Parkway, Escondido, 92025	1130-A2	ED B T
Paradise Valley Hospital	2400 E. 4th St., National City, 91950	1290-B7	ED
Pomerado Hospital	15615 Pomerado Rd., Poway, 92064	1170-C5	ED
Promise Hospital of San Diego	5550 University Ave., San Diego, 92105	1270-B5	
Scripps Green Hospital	10666 North Torrey Pines Rd., San Diego, 92037	1207-J6	
Scripps Memorial Hospital-Encinitas	354 Santa Fe Dr., Encinitas, 92024	1330-J2	ED
Scripps Memorial Hospital La Jolla	9888 Genessee Ave., San Diego, 92037	1167-D1	ED B T
Scripps Mercy Hospital-Chula Vista	435 H St., Chula Vista, 91910	1228-B1	ED
Scripps Mercy Hospital San Diego	4077 Fifth Ave. San Diego, 92103	1269-A5	ED B T
Sharp Chula Vista Medical Center	751 Med. Center Ct., Chula Vista, 91911	1330-J2	ED
Sharp Coronado Hospital and Health Care Center	250 Prospect Pl., Coronado, 92118	1289-A6	ED
Sharp Grossmont Hospital	5555 Grossmont Center Dr. La Mesa, 91942	1251-A7	ED B
Sharp Mary–Birch Hospital	3003 Health Center Dr., San Diego, 92123	1249-B5	
Sharp Memorial Hospital	7901 Frost St., San Diego, 92123	1249-B5	ED B T
Tri-City Medical Center	4002 Vista Way, Vista, 92056	1107-B2	ED B
UCSD Medical Center-Hillcrest	200 West Arbor Dr., San Diego, 92103	1269-A4	ED B T Burn
Thornton Hospital	9300 Campus Point Dr., La Jolla, 92037	1228-B1	ED
Veteran's Affairs San Diego Medical Center	3350 La Jolla Village Dr., San Diego 92161	1228-A2	

*(B) Designated Base Hospital (T) Designated Trauma Hospital (ED) Emergency Department (Burn) Designated Burn Center

Table 2

HOSPITALS WITH TREATMENT TEAMS
PRIMARY TREATMENT TEAMS

EMS AREA	UNIT
I	Tri-City Medical Center
II	Palomar Medical Center Naval Hospital-Camp Pendleton
III	Sharp Memorial Hospital Scripps Memorial Hospital -La Jolla
IV	UCSD Medical Center-Hillcrest Naval Medical Center-San Diego Scripps Mercy Hospital-San Diego
V	Scripps Memorial Hospital Chula Vista Paradise Valley Hospital Sharp Chula Vista Medical Center
VI	Sharp-Grossmont Hospital

SECONDARY TREATMENT TEAMS

I	Scripps Memorial Hospital-Encinitas (2)
II	Pomerado Hospital (2) Fallbrook Hospital
III	Veterans Affairs San Diego Medical Center (2) Rady Children's Hospital (Pediatric Incidents)
IV	San Diego Medical Center/Kaiser Foundation Hospital (2) Thornton Hospital
V	Sharp Chula Vista Medical Center Sharp Coronado Hospital and Health Care Center
VI	Alvarado Hospital Sharp-Grossmont Hospital

ATTACHMENT A

State And Federal Medical Support Functions And Agencies

State

The following state agencies are responsible for providing the disaster medical care services:

Emergency Medical Services Authority (EMSA)

The EMSA Director (State Disaster Medical Coordinator) is, in coordination with the California Department of Public Health (CDPH) and California Emergency Management Agency (CAL-EMA) responsible for:

- Coordinating state emergency medical response.
- Allocating medical resources, both public and private, from outside the affected area.
- Authorizing emergency travel and related expenditures and allied personnel, both public and private.
- Responding to requests for emergency medical assistance from Regional Coordinator and/or County Health Officers.
- Coordinating the evacuation of injured persons to medical facilities statewide using available ground and air transportation resources.
- Assisting local government to develop effective disaster response plans.
- Assisting local government to restore essential emergency medical services.

California Department of Public Health (CDPH)

- Provides staff support to the EMSA in disasters resulting in mass casualties.
- Provides staff support to the Joint Medical/Health EOC (JEOC) in Sacramento including: medical personnel unit; patient deployment unit; facilities liaison unit; and medical supplies unit.
- Staffs various administrative functions including: record keeping; finance; transportation liaison; communications; and medical personnel.
- Technical support for emergent infectious disease outbreaks

Military Department

Provides, as directed by the Governor at the request of OES:

- Medical support for the emergency field treatment of casualties.
- Evacuation of casualties to appropriate disaster medical facilities as required.

- Emergency medical care and treatment.
- Communication and logistics support for medical response.

Other State Agencies

- Department of Finance
- CAL FIRE – California Department of Forestry & Fire Protection
- Department of General Services
- Department of Youth Authority
- California Conservation Corps (CCC)
- Department of Social Services

Federal

Federal agencies operating under their own statutory authority may render direct assistance; however, following a Presidential Declaration, the Department of Homeland Security (DHS), through the Federal Emergency Management Agency (FEMA), will coordinate the federal response system supporting emergency medical needs resulting from disasters. FEMA is supported by the Sixth U.S. Army Headquarters, the Department of Homeland Security (DHS), the Department of Health and Human Services (DHHS), and the Department of Defense (DoD).

As State shortfalls occur, federal agencies will make their resources available to support state/local medical response efforts.

APPENDIX D-1

MEDICAL EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Determine condition and capacity of hospitals; request	EMS
Determine availability and condition of medical supplies; take appropriate action to maintain inventories or resupply.	All Agencies
Determine availability and condition of blood supplies; take appropriate action to maintain inventories or resupply.	San Diego Blood Bank

IF THERE ARE ONLY A FEW OR NO CASUALTIES, PREPARE TO SUPPORT MORE HEAVILY DAMAGED JURISDICTIONS.

IF THERE IS EXTENSIVE DAMAGE AND A LARGE NUMBER OF CASUALTIES, TAKE THE FOLLOWING ACTIONS AS APPROPRIATE:

Take action to expand hospital care capacity.	Hospitals
Augment personnel.	All Agencies
Obtain emergency supplies.	EMS
Provide emergency power to undamaged facilities.	SDG&E
Periodically poll health facilities to determine patient load and support requirements.	EMS
Activate plans to obtain supplementary services such as public information, records, reports, etc.	OES
Inform the Public Information Officer (PIO) of current information for dissemination to the public.	EMS
Activate Field Treatment Sites (FTS's).	EMS
Provide field medical care, including triage, near or in affected areas.	Responding Agencies
Determine number and location of casualties that require hospitalization.	EMS
Determine transportation needs and capabilities.	EMS

Have units dispatched to pick up injured.	Ambulance Providers
Allocate casualties to hospitals to make best use of facilities. Facilitating Base Hospital	Incident Commander
Determine availability and location of medical personnel.	EMS
Allocate personnel to medical facilities as required.	EMS
Request assistance from the Regional Disaster Medical Health Specialist/Coordinator (RDMHS/C) as required.	EMS

APPENDIX D-2

MEDICAL EMERGENCY ACTION CHECKLIST
RESPONSE TO HAZARDOUS MATERIAL INCIDENT

Action	Responsibility
Determine if specialized equipment is needed for medical personnel operating in the affected area. This may include activation of the San Diego Metropolitan Medical Strike Team (MMST).	HAZMAT Incident Response Team (HIRT)/IC
Determine number and location of casualties that require hospitalization.	Incident Commander
Activate hazard identification procedures.	DEH, Hazardous Materials Division (Haz-Mat)/HIRT
If a large number of casualties have occurred, request establishment of Field Treatment Site (FTS) and provide field medical care, including triage, near or in affected areas.	Incident Commander
Determine capabilities and capacity of hospitals.	Facilitating Base Hospital
Request hospitals to activate disaster plans if there are a large number of casualties.	EMS
Dispatch units to transport injured.	Ambulance Providers
Allocate casualties to hospitals to make best use of facilities.	Facilitating Base Hospital
Coordinate distribution of specialized medical supplies.	EMS
Periodically poll medical facilities to determine caseload and support requirements.	Hospital Association
Activate plans for supplementary services such as public information, records, and reports.	OES
Inform the Public Information Officer (PIO) of current information for public dissemination.	DEH, Hazardous Materials Division (Haz-Mat)/HIRT
Request assistance from the Regional Disaster Medical Health Specialist/Coordinator (RDMHS/C) as required.	EMS

Coordinate with the Transporting Coordinator, the movement of patients from any medical facility threatened by a hazardous material release.	EMS

APPENDIX D-3

MEDICAL EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

Flooding Expected

Action	Responsibility
Identify facilities subject to flooding and prepare to relocate people from facilities.	OES
Communication/Coordination about hazardous materials products & environmental health issues.	DEH, Hazardous Materials Division (Haz-Mat)/HIRT
Arrange to have standby emergency power at medical facilities.	Each Facility
Accelerate patient releases from facilities in flood-prone areas.	Each Facility
Designate an acute care facility to handle the medical needs of flood victims.	Facilitating Base Hospital
Store water for medical facilities.	Each Facility
Place medical personnel on standby status.	Each Facility
Assign medical liaison to the Emergency Operating Center (EOC), if activated.	EMS
Plan for alternate communications	EMS/ San Diego Sheriff's Communications Center (SCC)
Begin evacuation of medical facilities if flood conditions worsen.	Incident Commander
Assist with patient evacuation with Transportation Coordinator, if available/able	Local Law Enforcement
Assist with coordinating evacuation to non-institutionalized persons who require medical/nursing support, if available/able.	Local Law Enforcement
Relocate ambulance services from flood-prone areas.	Ambulance Providers
Evacuate flood-prone medical facilities, or move patients	Each Facility

and personnel to floors above flood waters.

Flooding Occurs

Action	**Responsibility**
Initiate alternate communications, if needed.	EMS/ San Diego Sheriff's Communications Center (SCC)
Determine number and location of casualties that require hospitalization.	Facilitating Base Hospital
If required activate Field Treatment Sites (FTS) and coordinate resources for field medical care.	EMS
Request assistance from the Regional Disaster Medical Health Specialist/Coordinator (RDMHS/C), as required.	EMS

APPENDIX D-4

MEDICAL EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

Dam Failure Imminent

Action	Responsibility
Put medical care personnel on standby.	All Agencies
Identify medical care facilities subject to inundation.	OES
Communication/Coordination about hazardous materials products & environmental health issues.	DEH, Hazardous Materials Division (Haz-Mat)/HIRT
Assist with the notifications and evacuation of patients from facilities, available/able.	Local Law Enforcement
Arrange to have standby emergency power on hand at medical facilities.	All Facilities
Move pharmaceuticals out of inundation areas.	All Facilities
Plan for alternate communications.	EMS/SCC
Coordinate the evacuation of patients with the Transportation Coordinator.	EMS
Assist with the coordination of evacuations of non-ambulatory patients in private residences, if available/able.	Local Law Enforcement

Dam Failure Occurs

Mobilize medical care personnel.	All Agencies
Reconfigure shifts as necessary.	All Agencies
Relocate ambulance services from inundation area.	Ambulance Providers
Assist with the notifications and evacuation of patients from facilities, if available/able.	Local Law Enforcement
Move patients and personnel to floors above floodwaters.	All Facilities

Initiate alternate communications, if needed.	EMS/ San Diego Sheriff's Communications Center (SCC)
Activate Field Treatment Sites (FTS) on high ground and coordinate resources for field medical care if required.	EMS
Determine number and location of casualties that require hospitalization.	Facilitating Base Hospital
Request assistance from the California Emergency Management Agency (CAL-EMA) Mutual Aid Region Disaster Medical/Health Specialist/Coordinator (RDMHS/C) as required.	EMS/CAL-EMA

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX E

Public Health Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX E

Public Health Operations

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ANNEX E
PUBLIC HEALTH OPERATIONS

I. General

The Public Health Operations Annex (Annex E) to the San Diego County Operational Area Emergency Plan describes the basic concepts, policies and procedures for providing public health services in the event of any emergency or disaster. Organizationally, public health services are provided under the coordination of the Health and Human Services Agency (HHSA), Public Health Services (PHS). This Annex serves as the unifying public health document for the San Diego County Operational Area, as authorized by the Emergency Services Agreement.

Purpose

To establish emergency public health operations (including planning, response and operations), assign responsibilities, and provide actions and responses to public health problems associated with emergencies or disasters.

Goals and Objective

The overall goal of emergency/disaster public health operations is to:

Minimize loss of life and human suffering, prevent disease and promote optimum health for the population by controlling public health factors that affect human health and by providing leadership and guidance in all emergency/disaster public health-related activities.

The overall objectives of emergency/disaster public health operations are to:

- Provide preventive health services and control disease outbreaks.
- Conduct rapid disease surveillance activities.
- Issue public health advisories.
- Respond to public health events.
- Coordinate health-related activities among other local public and private response agencies or groups.
- Establish procedures for activation and termination of this Annex.

Concept of Operations

For the purposes of the Operational Area Emergency Plan and this Annex, public health emergency/disaster events are those incidents that may pose a threat of disease or loss of optimum health to the citizens of San Diego County. Public Health serves as the unifying public health entity for the San Diego County Operational Area.

Plan Activation and Termination

Activation and termination of this Annex shall be by the direction of (1) the County's Chief Administrative Officer (CAO) in that capacity, or as Area Coordinator of the Unified San Diego County Emergency Services Organization; or (2) a designated Deputy CAO; or (3) the Director, Office of Emergency Services or designated representative; or (4) the Public Health Officer or designated representative; or (5) the Chief, Emergency Medical Services or designated representative.

Upon activation, the Public Health Officer determines the extent of public health services needed for the emergency or disaster and notifies the appropriate divisions and agencies.

ACTIVATION OF ANNEX E shall be declared under the following conditions:

1. Annex E is activated whenever a Level III full activation of the Operational Area EOC is called. Dependent on the public health impact of the emergency/disaster Annex E may be activated at emergency Levels I and II, as described below:
2. An event is imminent, or has occurred, in a populated area such that extensive casualties are inevitable, (e.g. structure collapse, major transportation emergency, hazardous materials release, or another public health emergency such as an infectious/communicable diseases outbreak.
3. Notification from cognizant authority that a significant number of casualties from outside the Operational Area are expected to be brought into the Operational Area via the State Mutual Aid System or the National Disaster Medical System (NDMS) (e.g., casualties from domestic or international war).

TERMINATION OF ANNEX E occurs when the Public Health Officer, in consultation with the County's Chief Administrative Officer (CAO); designated Deputy CAO; Director, Office of Emergency Services; and the Chief, Emergency Medical Services determine that the situation has stabilized, and emergency/disaster public health operations are no longer required.

II. Organization

The Emergency Operations Center (EOC), the Health & Human Services Agency Departmental Operations Center (HHSA DOC), and the Emergency Medical Services Departmental Operations Center (EMS DOC [MOC]) under the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) criteria, are key to successful emergency/disaster response and recovery operations. With centralized decision making, personnel and other resources can be more effectively utilized. Coordination of activities insures that all tasks are accomplished with little or no duplication of effort, and with the highest probability of success.

City Emergency Operations Center

Each city has a central facility designated as an EOC. From the City EOC, emergency/disaster operations are directed or coordinated. It is activated when an emergency/disaster occurs and is

staffed by city employees from departments with emergency responsibilities, as well as liaison representatives from other agencies and jurisdictions.

In the event that a City EOC is activated for a localized emergency/disaster that may threaten or endanger the public health they may request a Public Health consultation. This request would be made via San Diego Sheriff Communications Center (Station M).

Operational Area Emergency Operations Center

The Operational Area Emergency Operations Center (OA EOC) serves the entire San Diego County Operational Area, including the 18 cities, military bases and special districts, with the Chief Administrative Officer serving as Director of Emergency Services for the unincorporated area of the Operational Area and Coordinator of Emergency Services for the incorporated areas.

The Health Branch of the EOC (Figure 1) is activated based on operational need. It is staffed by pre-designated public health personnel and coordinates the emergency medical response for the Operational Area. The EOC Health Branch staff serves as advisors to the CAO, as well as makes decisions about resource allocation, priorities, and other public health matters. Additional members of the Health Branch may be physically located at an alternate site, the EMS DOC (MOC), maintaining constant communication with the EOC Health Branch liaison.

The following personnel may staff the OA EOC:

Policy Group:

Director, Health and Human Services Agency (or designee) reports to the CAO and is responsible for the long-range logistics planning and policy decisions of all emergency/disaster health services to include Emergency Medical Services, Public Health, and Behavioral Health.

Public Health Officer (or designee) reports to the CAO, and is responsible for the overall management of Public Health Services within the Operational Area. The Public Health Officer in consultation with the Director of HHSA makes policy decisions related to emergency/disaster health services.

Operations Section

Health Branch Positions:

Health Branch Coordinator position within the OA EOC is filled by the Chief, Emergency Medical Services (or designee). This position reports to the Operations Section Chief and is responsible for overall coordination of health and medical care operations and providing health and medical services expertise required in the OA. The Health Branch Coordinator oversees the activities of the following units: Public Health, Emergency Medical Services, and Behavioral Health.

Public Health Unit Leader is assigned to the EOC by HHSA and PHS. The Public Health Unit Leader is responsible for coordinating disaster public health operations throughout the OA. This position reports to the Health Branch Coordinator.

Emergency Medical Services Unit Leader is assigned to the EOC by HHSA and PHS. The EMS

Unit Leader is responsible for the management and needs assessment of all County EMS units and hospitals located in the OA. This position reports to the Health Branch Coordinator.

Behavioral Health Unit Leader is assigned to the EOC by HHSA and Behavioral Health Services. The Behavioral Health Unit Leader is responsible for the safety and well being of Behavioral Health clients and the provision of critical incident stress de-briefing and crisis intervention services to emergency workers, OA EOC staff and the general public during and after an emergency. This position reports to the Health Branch Coordinator

Other Operations Positions:

Operations Section Positions may be assigned by HHSA and PHS. These pre-designated staff will report to the EOC and fill a variety of positions to support activities in the Operations Section. These positions will report to the Operations Section Chief.

EMS Departmental Operations Center (Medical Operations Center)

The EMS DOC (MOC) serves as a support and procurement entity to the County OA EOC. While generally open and staffed whenever the OA EOC is activated, the EMS DOC (MOC) may also be activated independently for emergency/disasters that are localized, low level emergencies or are primarily health-related. The following are staff positions in the EMS DOC (MOC):

EMS Medical Director (or designee) serves as a liaison between EMS DOC (MOC) and the County Operational Area Ops section/division, and may act as the incident medical director. Pre-hospital personnel work under that physician's license.

Chief, Public Health Nursing (or designee) coordinates the activities and deployment of Public Health Services nursing staff.

Medical Director, Epidemiology and Immunization Services (or designee) coordinates surveillance and case investigation activities.

Public Information Officer coordinates information from the EMS DOC (MOC) to the Joint Information Center (JIC) at the OA EOC.

Public Health Services Staff fill positions to support the health-related needs and activities of the OA EOC and EMS DOC (MOC). Staff may be assigned to fulfill a variety of SEMS and NIMS required roles related to Operations, Finance, Planning, Intelligence and Logistics.

HHSA Departmental Operations Center

The HHSA Departmental Operations Center (HHSA DOC) serves as a support and procurement entity to the OA EOC. While generally open and staffed whenever the OA EOC is activated, the HHSA DOC may also be activated independently for emergency/disasters that are localized emergencies or primarily HHSA-related events. The HHSA DOC is typically activated for Continuity of Operations Plan activation and during recovery activities. The following are staff positions in the HHSA DOC:

HHSA Chief, Operations Officer position is generally filled by an Executive Staff member. This position coordinates the activities of the HHSA DOC.

HHSA Chief, Financial Officer (or designee) coordinates all aspects of HHSA financial documentation related to the event.

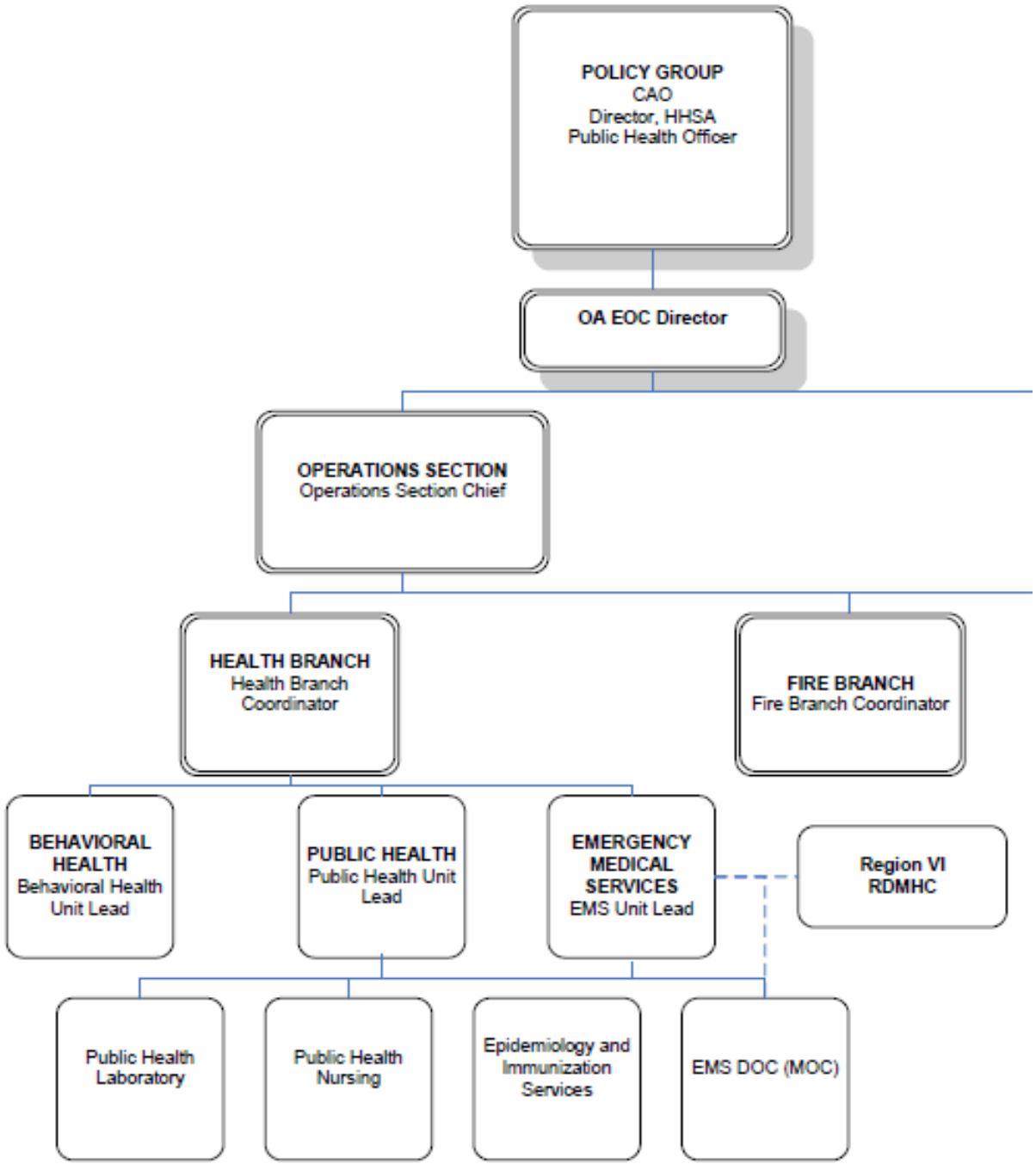
HHSA Human Resources Representative coordinates with the EOC and EMS DOC (MOC) to manage disaster service worker deployment.

Public Information Office Representative provides support to the EOC PIO for public information activities; drafts communications messages for HHSA managers and staff.

Other HHSA Representatives may be assigned to the HHSA DOC from the following programs: Aging & Independent Services, Public Health Services, Behavioral Health, and Regional Management Teams.

Figure 1

PUBLIC HEALTH OPERATIONS POSITIONS
OA EOC



III. Roles And Responsibilities

Public Health Services (PHS)

PHS Administration and Emergency Medical Services

1. Writes and updates this Public Health Annex and any other emergency public health plans and procedures.
2. Coordinates emergency/disaster/emergency public health operations within the Operational Area.
3. Coordinates the procurement, allocation and distribution of public health resources required to support emergency/disaster public health operations.
4. Requests and responds to requests from the State Mutual Aid Regional Disaster Medical/Health Coordinator for emergency/disaster assistance.
5. Develops and maintains a capability for identifying public health resources within the Operational Area.
6. Coordinates all public health-related activities among other local public and private response agencies or groups, as well as state and federal agencies.
7. Provides policy group representation to the EOC.
8. Provides Health Branch and other Operations staff to EOC and HHSA DOC.
9. Activates and fully staffs the EMS DOC (MOC).
10. Coordinates the deployment of Disaster Service Workers (Medical Reserve Corp) to response.

Epidemiology and Immunization Services Branch

1. Conducts epidemiologic surveillance for identification, monitoring, prevention, and administration of control measures.
2. Investigates communicable disease occurrence.
3. Conducts disease case investigations including tracing of possible contacts to an infected case.
4. Conducts real-time identification of indicators of increased health care services utilization
5. Monitors indirect indicators of disease activity, such as school absenteeism and prescriptions filled.
6. Collects and utilizes multiple, cross-referenced sources of data, such as Starlims, Electronic Laboratory Reporting, Virtual Confidential Morbidity Reporting, etc.
7. Investigates rumored disease outbreaks.
8. Manages vaccine supply.
9. Provides immunization as required.
10. Provides Public Information Officers (PIO) with communicable disease information to

be disseminated to the public and coordinates with other agencies when applicable.

11. Determines when special control measures (i.e. quarantine or prophylactic treatment) should be instituted based on epidemiological findings.
12. Works toward restoration of normal water supply and environmental control measures.
13. Increases level of surveillance activity as necessary.
14. Disseminates information vital to the prompt recognition and control of the disease, including CA Health Alert Network (CAHAN) releases to health care professionals.
15. Initiates public messaging as to risk-reducing behaviors to the media and public via the Department of Media and Public Relations.

Public Health Laboratory

1. Supports Public Health Services clinics and Regional Public Health Center clinics.
2. Conducts environmental testing, especially food, drinking water and possible sewage spills.
3. Provides Public health surveillance and assessment support.
4. Performs microbiological testing of human specimens as needed for disease control and support of Departmental clinics and hospitals.
5. Performs microbiological testing of food supplies as needed for disease control.
6. Assists in microbiological testing of the environment as needed.
7. Performs appropriate testing to identify animal to human disease exposure.

Public Health Nursing

1. Chief Public Health Nurse (or designee) coordinates activation of public health nurses from the regions and PHS branches during a Public Health emergency/disaster response and during the recovery period.
2. Provides outreach, teaching, and/or provide mass immunization/prophylaxis to the community at large (when directed by the Public Health Officer).
3. Assists with environmental and disease control measures when requested.
4. Assists with assessment of community health status.
5. Conduct communicable disease investigations.
6. Provides assistance to vulnerable risk groups as designated by the Health Officer.
7. Provides limited Behavioral health assistance related to emotional trauma and makes referral to Behavioral Health staff as needed **(**see ANNEX M, Behavioral Health Operations).
8. Provides staffing at Mass Care Shelters (see ANNEX G, Care and Shelter Operations)
9. Triage injured or ill individuals arriving at Shelters to appropriate level of care

10. May provide staffing at Field Treatment Sites and First Aid Stations, as requested **(**see **ANNEX D, Mass-Casualty Annex)**. For planning purposes, their role at the sites should normally be limited to public and preventive health activities.
11. Chief Public Health Nurse, with the Regional General Manager, will communicate the needs of the region through the HHSA DOC and then coordinate implementation and delivery of these services.

Public Health Centers

Throughout the County Operational Area, there are six (6) Public Health Centers: Central Region, East Region, North Inland, North Central, North Coastal, and South Region. These sites may be opened during an emergency/disaster, depending on the location and nature of the emergency and the availability of personnel and resources. Each Public Health Center is the primary assembly point for Public Health Center personnel during emergency/disaster activation. If an office or a Public Health Center is destroyed or inaccessible, staff will move to an alternate Public Health Center as designated in the Continuity of Operations assuming it is safe to do so. Emergency public health activities will be coordinated and priorities set under the direction of the Public Health Officer, the Chief Public Health Nurse, or designees.

Media and Public Affairs

As part of OA EOC activation the Joint Information Center (JIC) is staffed by representatives of the Department of Media and Public Affairs. Subject matter expert staff from various Public Health Services branches will work with the County Media Team. These subject matter experts work with the Public Information Officer (PIO) to prepare Public Health Advisories for broadcast during an emergency/disaster. Public Health Advisories inform the public of any immediate or long-term public health issues. Public Health Advisories may include, but are not limited to, emergency information regarding recommendations in the following types of activities:

Water	Sanitation
Food Preparation	Communicable Disease Control
Vectors	Radiological Protection
Hazardous Materials	Laboratory Testing

County of San Diego Office of Emergency Services (OES)

1. Assists with public health emergency/disaster planning and training.
2. Coordinates efforts to obtain resources both in the Operational Area and out of the Operational Area, including supplies and logistical support.
3. Requests, obtains, and allocates military assistance in accordance with military plans and procedures.
4. Activates, manages, and staffs the EOC.
5. Assists with recovery efforts, particularly in obtaining state and federal reimbursement funds.

6. Serves as the OA Coordinator for mutual aid

State (See Attachment A)

1. Responds to requests for resources from the Operational Area (OES or Health Officer).
2. The Director, California Department of Public Health, is the State Public Health Officer and has the overall responsibility of coordinating statewide emergency/disaster public health operations and support requirements.

Federal (See Attachment B)

1. Department of Health and Human Services, FEMA and CDC
    - Assists state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.
    - Assigns professional and technical personnel to augment state and local forces.
2. Food and Drug Administration
    - Works with state and local governments in establishing public health controls through the regulation of food and drugs.

State Mutual Aid

The State of California is divided into six mutual aid regions. The San Diego County Operational Area is in Region VI, which also includes the Counties of Mono, Inyo, San Bernardino, Riverside, and Imperial. In the event local public health resources are unable to meet the needs of the Operational Area, assistance from the neighboring jurisdictions is requested through the Regional Disaster Medical/Health Coordinator or the Office of Emergency Services (regional office). The Regional Coordinator coordinates the provision of medical and public health resources through the Operational Area. If a state response is indicated, the Regional Coordinator functions are subsumed under the overall State medical and health response.

Emergency/disaster public health requests are consolidated at the Operational Area and provided to the Regional Coordinator who transmits it to the State Operations Center (SOC). The Regional Coordinator will:

- Coordinate the acquisition and allocation of critical public and private medical and public health resources required to support emergency/disaster medical operations.
- Coordinate medical resources in unaffected counties in the Region for acceptance of casualties.

- Request assistance from the Emergency Medical Services Authority (EMSA) and the State Department of Health Services (DHS), as needed.

Communications

The Regional Communication System (RCS) is the primary Operational Area radio system for coordinating the emergency response to an emergency/disaster. The local Government Communications System is located at the Sheriff's Communications Center (Station M) and operates on 800 MHz.

There are currently six county public health clinics in the Operational Area that are part of the enhanced RCS:

- Central Region, San Diego
- East Region, El Cajon
- North Inland Region, Escondido
- North Central Region, San Diego
- North Coastal Region, Oceanside
- South Region, Chula Vista

The RCS allows for direct communications between all of the public health clinics OA EOC , and other EOCs and DOCs in the Operational Area.

1. Talk-groups

   All County agencies have been assigned their own talk groups. Mutual aid talk groups provide the ability for various agencies to talk to each other. (see ANNEX I – Communications)

2. Back-Up Communications

   A. Telephones, faxes, and wireless systems will be utilized when available.

   B. Amateur radio operators may be called upon for back-up communications at the scene(s), hospitals, clinics, first aid stations, the blood bank, field treatment sites, Red Cross Service Centers, the EOC, EMS DOC (MOC) and HHSA DOC if necessary. For more information on amateur radio operations capabilities see the San Diego County Mutual Aid Radio Plan.

ATTACHMENT A

STATE RESPONSIBILITIES

The Public Health Officer of the State Department of Public Health has the overall responsibility for coordinating statewide emergency/disaster public health operations and support.

The following state agencies have varied capabilities and responsibilities for providing support to public health emergency/disaster operations:

California Department of Public Health Services

Primarily responsible, the Public Health Officer or designee, for the administration and coordination of a statewide emergency/disaster public health program which includes coordinating, supervising, and assisting those essential services required to:

1. Assure availability of safe drinking water.
2. Prevent and control communicable disease.
3. Provide technical assistance in the safe operation of sewage collection, treatment, and disposal systems.
4. Assure prevention and control of vectors, including flies, mosquitoes, and rodents.
5. Assure observance of health aspects in management of solid waste disposal, including proper disposal of dead animals and human remains.
6. Assure safe management of hazardous wastes, including handling, transportation, and disposal.
7. Ensure safety of emergency supplies of food, drugs, medical devices, and other products.
8. Ensure rapid restoration or replacement of facilities for processing, storing, and distributing food, drugs, medical devices, cosmetics, and other products.
9. Rapidly establish measures to mitigate damage to public health from radiological accidents, including safety criteria for recovery, re-occupancy, and rehabilitation of contaminated areas.
10. Provide support to the California Air Resources Board in carrying out the public health aspects of the California Air Pollution Emergency Plan.

Department of Food and Agriculture

1. Administers programs for the control and eradication of diseases, pests or chemicals affecting animals, poultry or crops.
2. Provides information on the protection of human and animal food from contamination by harmful residues or chemicals.
3. Provides entomological and veterinary assistance in support of emergency operations.

Air Resources Board

1. Develops plans to prevent substantial endangerment to the health of persons by anticipating and preventing or abating air pollution emergencies.
2. Coordinates execution of air pollution emergency plans with Operational Areas and Regional Air Pollution Control Districts, Cal EMA, and other public agencies.
3. Coordinates the monitoring of air quality and issues bulletins consistent with public safety as required by the Department of Health Services.

State Water Resources Control Board

Assures safe operation of sewage collection, treatment, and disposal systems; and provides water quality advice and support in emergency operations.

Solid Waste Management Board

Responsible for the proper disposal of solid wastes.

ATTACHMENT B

FEDERAL RESPONSIBILITIES

Federal agencies operating under their own statutory authority may render direct assistance; however, following a Presidential Declaration, the Department of Homeland Security (DHS), through the Federal Emergency Management Agency (FEMA), will coordinate the federal response system supporting emergency medical needs resulting from disasters. FEMA is supported by the Sixth U.S. Army Headquarters, the Department of Homeland Security (DHS), the Department of Health and Human Services (DHHS), and the Department of Defense (DoD).

Federal Emergency Management Agency (FEMA)

Under, Emergency Support Function (ESF) #8 – Public Health and Medical Services, provides the mechanism for coordinated Federal assistance to supplement State, tribal, and local resources in response to a public health and medical disaster, potential or actual incidents requiring a coordinated Federal response, and/or during a developing potential health and medical emergency. Public Health and Medical Services include responding to medical needs associated with mental health, behavioral health, and substance abuse considerations of incident victims and response workers. Services also cover the medical needs of members of the "at risk" or "special needs" population described in the Pandemic and All-Hazards Preparedness Act and in the National Response Framework (NRF) Glossary, respectively. It includes a population whose members may have medical and other functional needs before, during, and after an incident.

ESF #8 provides supplemental assistance to State, tribal, and local governments in the following core functional areas:

- Assessment of public health/medical needs
- Health surveillance
- Medical care personnel
- Health/medical/veterinary equipment and supplies
- Patient evacuation
- Patient care
- Safety and security of drugs, biologics, and medical devices
- Blood and blood products
- Food safety and security
- Agriculture safety and security
- All-hazard public health and medical consultation, technical assistance, and support
- Behavioral health care
- Public health and medical information
- Vector control

Potable water/wastewater and solid waste disposal

Mass fatality management, victim identification, and decontaminating remains

Veterinary medical support

Department of Health and Human Services (DHHS)

DHHS, which includes the Centers for Disease Control and Prevention, and in collaboration with FEMA, has the primary federal responsibility for activities associated with health hazards resulting from emergencies. Is responsible to:

- Assist state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.
- Assign professional and technical personnel to augment state and local forces.

Food and Drug Administration

Guides state and local governments in establishing public health controls including decontamination or condemnation of contaminated food and drugs.

Policies and Procedures

1. If a local situation requires the regulation of a local health department in accordance with Section 207 of the Health and Safety Code, the State Department of Public Health will notify the appropriate health officer and assume control of local public health functions.

2. If local resources (both public and private) are inadequate to cope with the situation(s), required support will be requested through the appropriate OES Mutual Aid Regional Office. If the requirement cannot be met through resources available within the counties in the Region, the Region staff or Director will request assistance from the Sacramento headquarters, OES, who will then forward the request to the State Department of Health Services for assistance.

3. The provision of Federal resources prior to a Presidential Declaration of an Emergency is justified where prompt action is essential for the protection of life and property. After a Presidential Declaration is made, and upon instructions from the Region Director, Federal Emergency Management Agency, Federal agencies will make their resources available to support local and state emergency public health and sanitation efforts.

APPENDIX E-1

PUBLIC HEALTH OPERATIONS
EMERGENCY ACTION CHECKLIST

Action	Responsibility
Report to the EOC at Kearny Mesa, other designated staff report to EMS DOC (MOC) and HHSA DOC	Public Health Officer and Designated PHS Staff
Issue appropriate public health orders, including orders of quarantine, and protective guidelines, as needed.	Public Health Officer
Request proclamation of Local Emergency (if emergency is of a public health nature only).	Public Health Officer
Coordinate health-related activities among local public and private response agencies or groups.	Public Health Services
Communicate with local hospitals/clinics to determine surge needs	Public Health Services
Coordinate with the County Medical Examiner, on any Health related problems associated with the disposal of the dead.	Public Health Services
Request assistance from the State Mutual Aid Regional Disaster Medical/Health Coordinator, as required.	Public Health Services
Determine potential health hazards and establish standards for control.	Public Health Services
Coordinate a systematic inspection of health hazards in affected areas as needed.	Public Health Services
Assist in environmental protection activities.	Public Health Services
Implement preventive health measures, including the control of communicable diseases and other public health threats.	Public Health Services
Provide laboratory testing as needed to prevent environmental or human-to-human disease transmission.	Public Health Laboratory
Conduct appropriate laboratory testing to monitor situation throughout event response.	Public Health Laboratory

Assist in disease control activities.	Public Health Nursing
Assist in community health assessment.	Public Health Nursing
Assist in Field Treatment Sites, First Aid Stations, and Mass Care Shelters when requested.	Public Health Nursing
Provide supportive health care at operating Public Health Centers.	Public Health Nursing
Conduct preventive health services as needed.	Public Health Nursing

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX F

Department Of The

Chief Medical Examiner Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX F

Department Of The Chief Medical Examiner Operations

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ANNEX F
DEPARTMENT OF THE CHIEF MEDICAL EXAMINER OPERATIONS

I. General

This Annex establishes organizational responsibilities, policies, and procedures for the operation of the Department of the Chief Medical Examiner, hereinafter referred to as "Medical Examiner" during an extraordinary emergency involving multiple deaths, particularly following major natural disasters, technological incidents, terrorist attacks or a nuclear accident.

Objectives

The overall objectives of the Medical Examiner operations will be to:

1. Recover, identify and provide adequate disposition of human remains.
2. Coordinate evidence identification and collection with the appropriate law enforcement agency.
3. Determine the cause and manner of death.
4. Inventory and protect the personal effects of the deceased.
5. Prepare and coordinate the list of deceased, both identified and unidentified.
6. Notify next of kin.
7. Process and maintain necessary records.
8. Coordinate information and notification with local law enforcement jurisdictions, public health, and other related agencies.

Concept of Operations and Activation of Plan

During peacetime and day-to-day operations the Medical Examiner will prepare and update these emergency plans, Standard Operating Procedures, pre-arranged agreements, resource listings and checklists. Partial or full activation of this annex shall be by the direction of the Chief Medical Examiner or his designated representative.

II. Organization And Responsibilities

Local Conditions

The Chief Medical Examiner shall direct and coordinate all Medical Examiner-related objectives and services within the San Diego County Operational Area. The Medical Examiner will operate under normal procedures unless one or more of the following conditions exists:

1. Five or more deaths from a single incident or when the number of fatalities overwhelms Medical Examiner local resources.
2. Conditions in the recovery of bodies present a hazard to personnel, i.e., Hazardous Materials, radiation, etc.
3. Access to Medical Examiner's facility is blocked or impeded.
4. Medical Examiner's facility is severely damaged.
5. A local pandemic exists limiting the availability of Medical Examiner staff.

Responsibilities

In the event of an incident involving one or more of the above conditions the Medical Examiner's responsibilities are:

1. Designate a Disaster Control Staff Coordinator.
2. Establish a Medical Examiner Incident Commander and integrate the position into the Incident Command structure.
3. Provide a representative to the Emergency Operations Center.
4. Establish Field Medical Examiner Emergency Teams.
5. Establish Field or Site Body Collection Locations.
6. Establish a family assistance center.
7. Organize and establish Field Collection Staff.
8. Implement a record keeping system for numbers and identity of fatalities.
9. Establish body storage and examination facilities and transportation.
10. Coordinate with search and rescue teams for body recovery.
11. Coordinate with Law Enforcement and the Public Administrator's Office for recording, storing and protection of the personal effects of the deceased.
12. Notification of next of kin.

13. Coordinate the services of:

Funeral Directors	Dentists
American Red Cross	Salvation Army
X-Ray Technicians	Volunteer San Diego

14. Ambulance or other transportation agencies
15. Establish requests for mutual aid, if required, in accordance with the Medical Examiner's Mutual Aid System.
16. Determine disposition of human remains. In the event of mass fatalities beyond the local burial capacity, establish mass grave locations and a burial and preservation system, including marking graves for potential future recovery.
17. Respond to public inquiry.

III. Policies And Procedures

The level and extent of the activation of this plan is contingent on the actual event and the severity of the conditions.

Emergency Response

LEVEL I
The Chief Medical Examiner will direct and coordinate operations from the Medical Examiner & Forensic Center. On-duty personnel will immediately be assigned to the emergency. Normal operations will continue as called-back employees arrive to work.

LEVEL II
The Chief Medical Examiner will direct and coordinate operations either from the Medical Examiner & Forensic Center, a secondary headquarters, or the County/Operational Area Emergency Operations Center (EOC). On-duty and called-back employees will be assigned to the emergency as needed. Normal operations will possibly be suspended for the duration of the emergency.

LEVEL III
The Chief Medical Examiner will direct and coordinate operations from the County/Operational Area EOC. All employees will be assigned to the emergency. There is a complete activation of this emergency plan.

Notification and Call-Back

Upon notification of an event of emergency or disaster, all Medical Examiner staff will contact their supervisor, or appropriate person in the chain of command, as soon as possible for assignment. If communications cannot be established with the supervisor, or appropriate person within the chain of command, personnel are to report to the closest Sheriff's substation or police station for reporting their location via police radio.

Medical Examiner Field Emergency Teams

The Chief Medical Examiner will determine the need for utilizing Medical Examiner Field Emergency Teams, depending on the nature and the condition of the emergency. A Medical Examiner Field Emergency Team will consist of some or all of the following staff persons:

1. Deputy Medical Examiner
2. Medical Examiner Investigator
3. Law enforcement officer (field investigation, security)
4. Contract removal personnel
5. Forensic Autopsy Assistants
6. Clerical staff (record keeping, reports)

Communications

Various agencies of County Government utilize voice radio communications in the furtherance of their duties. These agencies operate on the RCS and have been assigned their own talk groups. Countywide and mutual aid talk groups provide the ability for these agencies to talk to each other and with other RCS using agencies. When required, these agencies coordinate via the Sheriff's Communications Center (Station M). The Medial Examiner is included in this category.

Body Collection Site

Under normal operations, the Medical Examiner team responds to the location of the body for recovery. In the event of multiple casualties or inaccessible recovery areas a Body Collection Site will be established in the field. In multiple casualty incidents, temporary morgue facilities, such as airport hangars, vacant warehouses, or other facilities may be utilized to house recovered bodies. Additionally, depending upon the circumstances of the event, the Medical Examiner will employ its mobile morgue vehicle and/or mobile morgue trailers to hold recovered bodies at the Body Collection Site. The Body Collection Site will be a designated point for the collection of all recovered bodies.

The Medical Examiner Field Emergency Team(s) will work at the Body Collection Site performing the following functions:

1. Tag and log recovered bodies as they are received.
2. Preliminary identification of remains.
3. Tag and log all property and personal effects.
4. Prepare remains for transportation to the Medical Examiner.

IV. Mass Fatality/Temporary Morgue Facility

Functions

When the fatality numbers exceed the capacity of the Medical Examiner or the Medical Examiner facility is unusable, the Medical Examiner will establish a Temporary Field Morgue. Assistance with this task is available from the National Disaster Medical System (NDMS) in the form of a Disaster Mortuary Operational Response Team (DMORT). During an emergency response, DMORTs work under the guidance of local authorities by providing technical assistance and personnel to recover, identify, and process deceased victims. The functions of a Temporary Field Morgue will be:

1. Receive, log, tag and place bodies in proper temporary storage.
2. Identify cause and manner of death.
3. Tag, log, and secure property and personal effects.
4. Identification process.
5. Disposition and transportation of remains, including determining when utilization of a mass grave is warranted.
6. Storage and disposition of property.
7. Counseling of staff.
8. Maintain necessary reports and records.

Facility

The Temporary Morgue Facility should be:

1. A large storage facility with a warehouse-type receiving area away from the front entrance.
2. Equipped with showers, water, electricity, parking areas, and telephone communications.
3. Fenced or locked for security.
4. Equipped with a front office reception area.

Staff

The Temporary Field Morgue staff needs are:

1. Medical Examiner Field Emergency Teams
2. Law enforcement for security
3. Outside x-ray technologist (non Medical Examiner staff) and portable field x-ray units, if available

4. Dentists
5. Anthropologists
6. Forensic Autopsy Assistants/Embalmers
7. Toxicology laboratory personnel
8. Clerical staff
9. Transportation coordinators

Equipment

The Temporary Field Morgue Equipment needs are:

1. Cold storage capability (can be mobile refrigerator vans, trucks or trailers)
2. Dental x-ray equipment
3. Telephones/radio communication to field agents
4. Office and record keeping supplies
5. Portable x-ray, if available
6. Portable autopsy tables
7. Source of running water
8. Electricity, source for saws
9. Lighting, source
10. Laptop(s)
11. Body pouches
12. Bar-coding equipment, if available
13. Generator(s)

V. Family Assistance Center (FAC)

Purpose

1. Guide families through the administrative process of reclaiming their loved ones.
2. Facilitate the administrative process providing timely and accurate information.
3. Provide appropriate emotional support for grieving families by coordinating a mental health/spiritual professional to work with them

Victim Identification Data Collection

The FAC is the primary location for collecting antemortem data for victims of a mass fatality incident for identification purposes. In the event of a natural disaster, such as flood or earthquake, the FAC will be a data collection point to gather information to reunify separated family members.

Family Interview Process

The Medical Examiner's Office requires antemortem data for identification. This information will be gathered from family members via an interview with an investigator or mortuary officer. During the interview process, family members will be asked to provide very detailed information regarding their loved one's body, medical history, etc. Interviewers will collect this information in a caring and compassionate manner. Information collected will be compared to postmortem data for identification purposes.

FAC Location

The facility should be in a location not associated with the disaster site or morgue. Access to the FAC should be easy and contain ample parking. The location must be large enough to accommodate the following rooms/spaces:

1. Family Room – Medical Examiner/National Transportation Safety Board (NTSB) briefings will take place in the Family Room and as a result there should be enough room to comfortably accommodate 150-300 people or more. However, the actual size of the room will be incident specific.
2. Reception Area – Required to evaluate needs of family members or any visitors to facility.
3. Family Interview /Death Notification Rooms – Private rooms that will accommodate a minimum of 10 people.
4. Family Refreshment Room
5. Childcare Room
6. Chapel
7. Information Resources Center – Houses database administration, network/technical support.
8. Administrative Office Space – Work area for Medical Examiner and other governmental agencies such as the NTSB, chaplaincy, security, mental health professionals, etc.

VI. Mass Burial

Necessary Conditions

Mass burial may become necessary when the number of victims becomes a public health hazard and the dead cannot be:

1. Adequately refrigerated or embalmed to prevent decomposition.
2. Processed and identified.
3. Released to the next of kin.
4. Transported to and/or cared for by cemeteries, mausoleums, crematoriums, etc.

Joint Decision

The decision to begin mass burial must be made jointly by the Chief Medical Examiner and County Public Health Officer, the County's Director of Emergency Services, the County's Office of Emergency Services, the California Emergency Management Agency, and applicable city/special district officials and leaders within the community.

Location

The site of mass burial must also be agreed upon by the above agencies, taking into consideration the number and location of dead to be buried. Ideally, an existing cemetery would be the most logical location for mass burial. However, should this type of site not be available, the following are suggested locations:

1. County landfill areas.
2. Parks and recreational areas.
3. Flood control basins (weather permitting).
4. Sides of freeways and river beds.
5. Areas beneath power lines.
6. Rail yards and areas along rail lines.

Record Keeping and Final Disposition

The burial, preservation and record keeping system (grids and numbers) would be supervised by the Medical Examiner. Efforts will be made to mark graves for potential future recovery. Further disposition of buried bodies would be handled by the the Medical Examiner in conjunction with the next of kin, local authorities, and cooperating funeral homes.

ATTACHMENT A

SUPPORTING AGENCIES AND GROUPS

1. Public Administrator's Office, County of San Diego: Property of deceased
2. General Services, County of San Diego: Provide equipment and supplies
3. Purchasing and Contracting, County of San Diego: Purchasing emergency supplies
4. Environmental Health, County of San Diego: Public health hazard of un-disposed remains; environmental safety for Medical Examiner Field Teams
5. American Red Cross and Salvation Army: Assist with the Family Assistance Center; Public Inquiry Report record keeping assistance
6. County Communications Office, County of San Diego: Assist with media and public requests
7. HHSA Behavioral Health, County of San Diego: Critical incident stress management
8. Emergency Medical Services, County of San Diego: Temporary morgue
9. Fire departments/districts: Temporary morgue
10. Law enforcement agencies: Medical Examiner Field Teams; field security; property security; Family Assistance Center security
11. Dentists, x-ray technicians and anthropologists: Identification process
12. Funeral Directors: Transportation and final disposition of remains
13. Ambulance and Transportation Companies: Transportation and recovery of remains
14. Volunteer San Diego: Coordination of volunteers

APPENDIX F-1

MEDICAL EXAMINER EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Establish Body Collection Sites.	Medical Examiner
Determine and procure additional supplies.	Medical Examiner/OES/General Services/Purchasing and Contracting
Set up reporting/record keeping system.	Medical Examiner
Determine transportation needs and route status.	Medical Examiner
Establish field morgue, if needed.	Medical Examiner
Assign support personnel for identification and field processing.	Medical Examiner
Coordinate with law enforcement for security.	Medical Examiner/Law Enforcement
Notification of next of kin.	Medical Examiner
Response to public inquiry.	Medical Examiner/OES/County Communications Office/American Red Cross/ Salvation Army
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner

APPENDIX F-2

MEDICAL EXAMINER EMERGENCY ACTION CHECKLIST
RESPONSE TO HAZARDOUS MATERIAL INCIDENT

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Coordinate with Field Command Post.	Medical Examiner Field Teams
Determine hazard to responding personnel.	Environmental Health (Hazardous Materials Division)
Determine requirement of special procedures in body recovery.	Medical Examiner/Environmental Health (Hazardous Materials Division)
Establish Body Collection Site,	Medical Examiner
Set up reporting/record keeping system,	Medical Examiner
Determine and procure additional supplies.	Medical Examiner/OES/General Services/ Purchasing and Contracting
Provide for transportation of bodies.	Medical Examiner
Identify and provide for the disposition of bodies.	Medical Examiner
Notification of next of kin.	Medical Examiner
Response to public inquiry.	Medical Examiner/OES/County Communications Office/American Red Cross/ Salvation Army
Secure personal property of deceased.	Public Administrator/Medical Examiner
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner

APPENDIX F-3

MEDICAL EXAMINER EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Coordinate with Field Command Post.	Medical Examiner Field Teams
Establish Body Collection Sites.	Medical Examiner
Determine and procure additional supplies	Medical Examiner/Environmental Health (Hazardous Materials Division)
Set up reporting/record keeping system,	Medical Examiner
Determine transportation needs and route status.	Medical Examiner
Identification and determination of disposition of bodies.	Medical Examiner
Secure personal property of deceased.	Public Administrator/Medical Examiner
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner
Coordinate the reburial of any cemetery coffins that may be unearthed at inundated cemeteries.	Medical Examiner/Funeral directors
Coordinate with continued search efforts for body recovery.	Medical Examiner/Law Enforcement

APPENDIX F-4

MEDICAL EXAMINER EMERGENCY ACTION LIST
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Coordinate with Field Command Post.	Medical Examiner Field Teams
Establish Body Collection Sites.	Medical Examiner
Determine and procure additional supplies.	Medical Examiner/OES/General Services/Purchasing and Contracting
Determine transportation needs and route status.	Medical Examiner
Identification and determination of disposition of bodies.	Medical Examiner
Secure personal property of deceased.	Public Administrator/Medical Examiner
Coordinate the reburial of coffins that may be unearthed at inundated cemeteries.	Medical Examiner/Funeral directors
Continued coordination with downstream search and rescue operations for body recovery	Medical Examiner/Law Enforcement
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner

APPENDIX F-5

MEDICAL EXAMINER EMERGENCY ACTION CHECKLIST
RESPONSE TO MAJOR TRANSPORTATION ACCIDENT

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Coordinate with Field Command Post.	Medical Examiner Field Teams
Establish Body Collection Site.	Medical Examiner
Set up reporting/record keeping system.	Medical Examiner
Determine and procure additional supplies.	Medical Examiner/OES/General Services/Purchasing and Contracting
Establish Field Morgue, if needed.	Medical Examiner
Assign personnel for identification and field processing of bodies	Medical Examiner
Disposition of property of deceased.	Public Administrator/Medical Examiner
Provide for transportation of bodies.	Medical Examiner
Notification of next of kin.	Medical Examiner
Response to public inquiry.	Medical Examiner/OES/County Communications Office/American Red Cross/ Salvation Army
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner

APPENDIX F-6

MEDICAL EXAMINER EMERGENCY ACTION CHECKLIST
RESPONSE TO PANDEMIC INFLUENZA INCIDENT

Action	Responsibility
Staff OA EOC.	Medical Examiner
Coordinate Medical Examiner Field Teams.	Medical Examiner/Law Enforcement
Coordinate with Field Command Post.	Medical Examiner Field Teams
Establish Body Collection Sites.	Medical Examiner
Set up reporting/record keeping system.	Medical Examiner
Determine and procure additional supplies.	Medical Examiner/OES/General Services/Purchasing and Contracting
Establish Field Morgue, if needed.	Medical Examiner
Assign personnel for identification and field processing of bodies	Medical Examiner
Disposition of property of deceased.	Public Administrator/Medical Examiner
Provide for transportation of bodies.	Medical Examiner
Notification of next of kin.	Medical Examiner
Response to public inquiry.	Medical Examiner/OES/County Communications Office/American Red Cross/ Salvation Army
Provide and release information to the public.	Medical Examiner/OES/County Communications Office
Request Mutual Aid, as needed.	Medical Examiner

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX G

Care And Shelter Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX G

Care And Shelter Operations

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ANNEX G
CARE AND SHELTER OPERATIONS

I. General

Introduction

Mass care and shelter is an organized way of providing safe havens for large numbers of people temporarily displaced from their dwellings by natural, technological or man-made emergencies or disasters. This plan is specifically designed to address the need for temporary shelter during large-scale emergencies and/or major disasters. This plan does not apply to day-to-day emergencies. Typically, the American Red Cross Chapter is capable of responding to day-to-day emergencies that require sheltering, using their own resources.

Purpose

The purpose of this plan is to:

1. Define the collective and individual responsibilities of County and/or City governments and non-governmental agencies responding to or acting in support of mass care and shelter operations.
2. Establish lines of authority and communications in support of the activation and operation of this plan.
3. Describe Care and Shelter operations within the County of San Diego

Situation and Assumptions

Situation

Based upon the County's hazard analysis, there are several emergencies for which shelters may be required including floods, hazardous material accidents, fires, earthquakes, wildfires or acts of terrorism. The County of San Diego is responsible for shelter operations.

There are many identified locations that may be used as shelters. These locations will be used depending on area of impact and type of situation.

Sheltering for San Diego County evacuees will be coordinated through the Operational Area Emergency Operations Center (OA EOC) a.

Assumptions

A high percentage of evacuees will seek shelter with friends, relatives or find their own means of shelter rather than go to a public shelter. Typically only 10% - 20% of the affected population will seek public shelter.

Evacuees will be provided with information in the shelter concerning the current situation of the disaster.

Objectives

The overall objectives of care and shelter operations are to:

1. Coordinate and provide food, shelter, medications, medical assistive equipment, crisis counseling and other basic disaster caused needs.
2. Coordinate and provide inquiry service to reunite separated families or respond to inquiries from relatives and friends outside of the affected areas.

II. Organization

Shelter Management/Operations

The County of San Diego Health and Human Services Agency (HHSA) will be the lead agency responsible for providing mass care. The American Red Cross (ARC) will provide mass care services until the ARC determines that it has reached its maximum capability to provide mass care services.

Below is a list of potential ways that shelter operations could be organized:

American Red Cross (ARC) Shelters
The traditional ARC shelter model is one in which the ARC occupies a facility, plans, organizes, directs and controls every aspect of the services provided at the shelter.

County Operated Shelters
The County of San Diego assumes all responsibility for the services provided in the shelter, including liability and fiscal accountability. The primary workers will be the members of the County's Shelter Team Program.

City Operated Shelter
Shelters operated by a City government assume all responsibility for the services provided in the shelter, including liability and fiscal accountability.

ARC managed shelters with City/County support
Also referred to as Partner Shelters, the majority of the shelter staffing will come from the partner agencies (City/County). The shelter will be under the administrative control of the American Red Cross. The American Red Cross will plan, organize, direct and control the services provided at the shelter. Direct delivery related expenses will be provided by the American Red Cross. However, liability will be shared by the American Red Cross, the facility owner, and the partner based upon their respective responsibilities. All agencies participating in such a shelter must adhere to the American Red Cross' Code of Conduct.

City/County managed shelters with ARC support
The managing agency maintains administrative control and assumes responsibility for planning, organizing, directing, and controlling every aspect of the shelter and the relief services provided.

The American Red Cross may support the shelter with pre-negotiated levels of financial, logistical, material or technical support. All agencies participating in such a shelter must adhere to the American Red Cross' Code of Conduct.

Independent Shelters

These are shelters that spontaneously appear due to community-based organizations or faith-based organizations trying to meet a perceived need. Independent shelters are outside of the established response mechanism. In the event that a group of citizens or a community organization opens a shelter without American Red Cross, OA EOC or local jurisdiction approval, that entity will assume financial and legal responsibility for the shelter.

Types of Shelters

Three levels of sheltering have been developed for shelter operations in San Diego County. The tiered levels were created to ensure appropriate care is provided, and adequate shelter staff is available at each shelter depending upon the needs of the population residing in the shelter.

Level I – Congregate Care Shelter

Description	Examples
Those who are independent and capable of self-care requiring only minimal support for minor illnesses and injuries.	Well, able-bodied; sprains, strains, cuts, colds; those taking medication for stable acute or chronic conditions such as arthritis.
Those with conditions requiring observation or minor supportive assistance in activities of daily living. Independent with some family/caretaker support.	Those that require the use of wheelchair or assistive device but can transfer; stable diabetics (insulin or diet controlled); those who are currently stable but on medications for cardiac or respiratory conditions; and those with controlled hypertension, or renal problems.
Those with conditions requiring some level of privacy or separations but do not require skilled or continuous health care support from facility staff. *If adequate staff and privacy are not present, this population will need to be referred to Level II Facility.*	Those requiring assistance from family member/caretaker in activities of daily living and have that person with them; those with portable Oxygen in use and with knowledge of how to administer; those with non-infectious TB case receiving daily treatment; and those with moderate Alzheimer's or dementia.

Level II – Designated Care Shelter

Description	Examples
Those requiring frequent or continuous surveillance for potentially life threatening conditions or require bedding or bathroom facilities not available in a congregate shelter.	Incontinent persons or those requiring assistance with toileting; those with limited mobility who cannot sleep on a cot or transfer; or those with severe dementia.

NOTE: *Congregate Care sheltering is not ideal for the following individuals: Every effort should be made to place them in an appropriate (like-bed) facility. Only in extreme situations would Skilled Nursing Facilities be housed and cared for in a congregate care shelter serving as an Alternate Care Site. All decisions regarding relocation of a resident in a Skilled Nursing Facility must be approved through the Emergency Medical Services Department Operations Center.*

Level III – Alternate Care Site

Description	Examples
Those requiring skilled care, continuous observation, or special equipment and services usually found in a hospital.	Those needing IV feeding or medication; those completely bedridden requiring total care; those with uncontrolled chronic or acute physical or mental conditions.

Unique Populations

Convicted Sex Offenders

The safety of all shelter residents and children is paramount. It is essential that parents/guardians provide oversight of their children at all times.

Pursuant to California Penal Code 3003.5 (b) "Notwithstanding any other provision of law, it is unlawful for any person for whom registration is required pursuant to Section 290 to reside within 2000 feet of any public or private school, or park where children regularly gather." An emergency temporary shelter is not a residence, and therefore the law does not apply. A convicted sex offender may temporarily reside at a school or facility in a park, provided the stay is provisional and not permanent.

Pursuant to the provisions of the California Emergency Services Act, during a locally proclaimed disaster, the County of San Diego has the ability to authorize functions or duties to be performed in order to provide emergency services to the residents of San Diego County.

Convicted sex offenders have the legal right to lodge at all mass care shelters without the need to divulge criminal record information. If the offender chooses to inform any authority, this information shall only be provided to the appropriate personnel. No information shall be publicly revealed.

When a convicted sex offender does disclose their status:

1. If only the Shelter Manager/workers are aware of the situation, confidentiality must be maintained and the person should remain in the shelter until they are able to return home, unless other actions are determined necessary by the Shelter Manager/ Workers.
2. If other shelter residents are aware of the situation, the resident must be relocated to another facility for their safety.
3. Individual agencies may provide alternate housing at the agencies' expense as the situation warrants.

Pre-disaster Homeless Population

Congregate care shelters are designed to assist residents displaced from their homes due to a disaster by providing for their disaster caused emergency needs.

Pre-disaster homeless populations may reside at a shelter and have their basic needs met, however, a shelter will not remain open only for the homeless population.

Every effort should be made to assist the pre-disaster homeless population with relocation and other assistance they may require.

The OA EOC will be able to assist in requesting resources from the homeless resources in San Diego County. These resources include, but are not limited to the Homeless Outreach Team, Interfaith Shelter Network, and St. Vincent de Paul Village. 211 San Diego is another resource to find available services for the pre-disaster homeless.

Unaccompanied Minors

Mass care shelters shall provide food, shelter, and safety for those under the age of 17 that arrive at a shelter without their parents/guardians.

In order to ensure the health and safety of unaccompanied minors, they must reside in a separate but co-located area/room within the shelter where they shall be monitored and cared for by appropriate staff until they can be relocated with their parents.

If a child is unable to be reunited with their parents, the Law Enforcement Branch in the OA EOC should be contacted to request the Sheriff's Juvenile Investigators for assistance.

Language Barriers

When a population is affected that is unable to communicate with the shelter team on site, there are various sources for translators: County of San Diego Department of Human Resources, 211 San Diego, American Red Cross, and Deaf Community Services for American Sign Language specifically.

III. Authorization

County of San Diego Health and Human Services Agency (HHSA)

HHSA will be responsible for leading care and shelter operations.

Responsibilities are defined as follows:

1. During an emergency or proclaimed disaster, the Director of the County Health and man Services Agency, or designee, shall report to the OA EOC and serve as the Care and Shelter Branch Coordinator.
2. The Care and Shelter Branch Coordinator shall:
3. Coordinate local government support for Care and Shelter Operations.
4. Coordinate resources and mutual aid requests for government agencies or departments.
5. During an EOC activation, HHSA shall:
    A. Assist with communications as needed, to establish required communication between the OA EOC, American Red Cross Disaster Operations Center, and other locations.
    B. Continue to provide essential public assistance services.
    C. Provide trained personnel to mass care shelters as available and upon request.
    D. Provide care for unaccompanied minors.
6. Ensure that an adequate number of HHSA personnel are trained in shelter operations.
7. Co-chair the Care and Shelter Subcommittee of the Unified Disaster Council.
8. Develop, maintain, and test Care and Shelter Operations plans for the Operational Area in conjunction with UDC Care and Shelter Subcommittee.

Health and Human Services Agency, Public Health Nursing

When requested by the American Red Cross/City operated shelters through the OA EOC Care and Shelter Branch and when resources are available:

1. Administer first aid following American Red Cross protocols for minor illness and injury and refer clients to a higher level of care when appropriate.
2. Perform health assessments of shelter residents who self identify with health problems and develop a plan to meet clients' immediate health needs.
3. Monitor persons identified with special health concerns such as chronic diseases and pregnancy.

4. Assist the shelter manager with maintaining the shelter in a manner that protects the clients from contracting communicable diseases common in group living situations.
5. Provide resources to crisis counseling services and provide support to clients.
6. Monitor food preparation and distribution to promote the protection from food-borne diseases in cooperation with Environmental Health.
7. Assist shelter residents with general health education and advice.
8. Assist shelter residents with replacing lost medications and medical devices.
9. Provide referrals to other local, county and State agencies that provide medical and social services.
10. Provide status reports to the Public Health Nurse Management representative at the Emergency Medical Services Departmental Operations Center or the HHSA Department Operations Center.
11. Assist with requests for trained nurses, health care providers, social services, and supplies based on shelter needs and assessment to the Emergency Medical Services Departmental Operations Center.

In addition to above, the Public Health Nurse may perform the following additional duties in a County operated shelter:

1. Assist with the initial screening of evacuees as they come to the shelter and refer as needed
2. Filling the role of a Medical Manager to oversee the overall management of the medical services in the shelter.
3. Perform additional duties as assigned by the Chief Public Health Nurse or designee.

In addition to above, the Public Health Nurse may perform the following additional duties in the County Level II shelter working alongside Medical Reserve Corp:

1. Oversee and assist evacuees with Activities of Daily Living (ADLs).
2. Oversee and monitor evacuees with stable chronic medical conditions (such as obtaining vital signs and glucose levels).
3. Oversee and assist with coordination of care for evacuees to receive hospice care, home health, and other services.

Health and Human Services Agency, Behavioral Health Services

Provide crisis counseling at sites as requested, per Annex M, Behavioral Health Operations, as available. Collaborate with community partners to extend required services as necessary.

County of San Diego, County Shelter Team Program

1. The County Shelter Team Program is designed to augment the sheltering resources of the American Red Cross.
2. The County Shelter Team Program may administer Level I shelters once American Red Cross resources are exhausted.
3. The County Shelter Team Program will be the primary operators for Level II shelters.
4. Teams are made up of County employees from various departments that have been trained prior to a disaster in either Shelter Management or Shelter Operations. The medical services providers will be assigned through the Emergency Medical Services Department Operations Center.
5. For an average shelter accommodating 100-200 residents, teams are made up of one Shelter Manager and three to four Shelter workers per shift, and can be scaled up depending upon the size of the shelter.

American Red Cross, San Diego/Imperial Counties Chapter

The American Red Cross (ARC), as mandated by Federal Law 36-USC-3 and reaffirmed in Public Law 93-288 (Federal Disaster Relief Act of 1974), provides disaster relief in peacetime and works cooperatively with state and local governments and other private relief organizations.

The American Red Cross (San Diego/ Imperial Counties Chapter) may open a maximum of 7 shelters (estimated population between 5,000 to 10,000 people) within the first 72 hours of an incident. These figures are dependent upon the facilities available during a given disaster and overall situational safety.

1. Prior to a disaster requiring congregate sheltering, the American Red Cross will assist in the following ways:
    A. Assist in the development and maintenance of the Care and Shelter Annex to the Operational Area Emergency Plan in conjunction with HHSA, OES, and the Care and Shelter Subcommittee of the Unified Disaster Council.
    B. Provide mass care training to requesting government agencies, non-governmental agencies, and community based organizations.
2. During an emergency or when requested, provide:
    A. Emergency lodging in congregate care facilities for disaster victims.
    B. Food for persons in emergency congregate care facilities.
    C. In a non-federally declared disaster, if funding exists and with the support of other disaster response agencies/organizations; a means to purchase new clothing, temporary housing, possible assistance with rent and security deposit, medication and health needs and occupational supplies.
    D. In a federally declared disaster, with the approval from the National American Red Cross office; the local chapter will provide for the

emergency support needs (such as food, shelter, and medical services), and bulk distribution of mass care supplies as defined by the incidents' needs to support the efforts of government agencies.

E. Physical Health Services: provide support to persons who have disaster-related or disaster-aggravated health needs. Assist clients in the procurement of prescribed medications lost in the disaster. Provide financial assistance as needed for medications and medical-related items. Provide minor first aid treatment of patients. Disaster Health workers do not provide treatment for pre-existing injuries or provide medical diagnosis.

F. Crisis Counseling Services: provide emergency and preventive crisis counseling services to people affected by the disaster. This includes methods to cope with disasters, crisis intervention and referral services to meet behavioral health-related concerns. Disaster crisis counselors do not provide diagnosis, long term therapy, or prescribe/administer medications.

G. Food for disaster workers if normal commercial feeding facilities are not available.

H. Welfare Inquiry for family members and friends trying to relocate/reunite with people in the affected area. Individuals must register themselves and their families by calling or through the American Red Cross website. Typically, there is a 48-72 hour moratorium on requests in order for the American Red Cross to concentrate on the immediate needs of the disaster victims.

I. Liaison personnel to the OA EOC and/or to the Incident Command Post. This position must possess:

1. A thorough knowledge of the American Red Cross system and procedures.
2. Understanding of the OA EOC and it's purpose.
3. Familiarization with WebEOC.
4. Ability to work within the established County protocols to meet the needs of the community.
5. Ability to assist the Department of Animal Services with coordinating and management of animals brought to American Red Cross Shelters.

J. Distribute appropriate bulk supplies as required by the needs of the affected community.

K. During a disaster when local American Red Cross resources are exhausted, initiate mutual aid requests from neighboring American Red Cross Chapters and/or if needed, request assistance from National American Red Cross.

L. Co-chair the Care and Shelter Subcommittee of the Unified Disaster Council.

Unified Disaster Council Care and Shelter Subcommittee

Responsibilities of this subcommittee shall include the following:

1. Develop, maintain, and test Care and Shelter Operations plans for the Operational Area in conjunction with American Red Cross and the HHSA.
2. Delineate criterion and method of justification for activation of this Annex.
3. Review and update Care and Shelter Annex as needed.

County of San Diego, Office of Emergency Services (OES)

As primary responsibilities, the OES shall:

1. Support the American Red Cross, HHSA, local municipalities, and School Districts in the coordination and planning activities of the Care and Shelter Subcommittee of the Unified Disaster Council.
2. Activate and manage the OA EOC.

Area Law Enforcement Coordinator

Responsibilities of the Area Law Enforcement Coordinator are as follows:

1. Law Enforcement agencies will ensure that they coordinate with the Care and Shelter Branch of the OA EOC during a disaster, so as to ensure adequate locations for sheltering or temporary evacuation points are identified for residents that may be displaced from their homes. Whenever possible, coordination with the Care and Shelter Branch Coordinator should occur prior to evacuation of a given area.
2. Any time additional evacuations are ordered, Law Enforcement agencies should be in contact with the Care and Shelter Branch of the OA EOC.
3. Law Enforcement must confer with the Care and Shelter Branch of the OA EOC before announcing shelter facility locations.
4. Law Enforcement agencies will provide temporary security at shelter sites if theft or aggression issues become problematic. This is only temporary until alternate arrangements can be made for security at the site.

County of San Diego, Department of Animal Services

The Department of Animal Services shall:

1. Coordinate with the Care and Shelter Branch in the OA EOC to ensure care for pets brought to shelters as required.

2. Provide referrals to evacuees for animal services and resources.
3. Assist with lost and found inquiries.

County of San Diego, Department of Human Resources

The Department of Human Resources, Director shall appoint a Vulnerable Population Unit Leader to the OA EOC, who shall:

1. Ensure specialized services are provided as required for the vulnerable population groups including the aged and disabled.
2. Coordinate local government support for vulnerable populations at shelters.
3. Collaborate with the Care and Shelter Branch Coordinator to coordinate resources and requests for the vulnerable populations in shelters.

Emergency Medical Services Department Operations Center (EMS DOC)

Emergency Medical Services (EMS) will be responsible for the activation of the Emergency Medical Services Department Operations Center (EMS DOC).

Upon this activation, the DOC will coordinate the following to support shelter operations:

1. The overall medical response to the specific event.
2. The dispatching of medical service providers to shelters as requested – either with the Medical Reserve Corps (MRC) members, Public Health Nurses (PHN), and others.
3. Dispatching the Disaster Rapid Assessment Team (DRAT)

County of San Diego, Medical Reserve Corps

1. Upon the orders of the Public Health Officer, the Medical/Health Branch Manager at the OA EOC, or the EMS Duty Officer through the EMS DOC, will activate Medical Reserve Corps volunteers during an event in which local established clinical resources are exceeded.
2. These volunteers, as clinical disaster service workers, will provide medical support to shelters as needed and as available.

Disaster Rapid Assessment Team (DRAT)

1. A DRAT is a designated unit of volunteer and County of San Diego health care professionals, trained to operate in a disaster situation as a coordinated team to assess potential/current shelters for the need of medical resources.
2. The intent and purpose of the DRAT will be to provide health intelligence for the EMS DOC regarding the need for medical staff, supplies and care at shelters that have been established or spontaneously opened during an evacuation event.

3. The DRAT will respond to events requiring sheltering. They will perform assessments at shelter sites for the medical needs. They will never be sent into a hot or warm zone, but may serve in a field situation.
4. DRATs will be made up of appropriate compositions of staff as needed, determined at the time of the disaster.
5. Specialized DRATs respond to just one type of incident, such as a mass evacuation of an acute care hospital or Skilled Nursing Facility where a specific specialty may be required. They will be called upon to respond in their area if needed after the general DRATs are deployed and have requested further assessment for that specific event.
6. A specialized DRAT will consist of the required health care or response personnel, such as Behavioral Health, Child Protective Services, or Aging and Independence Services.

San Diego County, Public School Districts

Reference Section 40041.5 of the Education Code, concerning the granting of school facilities for "mass care and welfare shelters during disasters or other emergencies affecting the public health and welfare."

1. Collaborate with the OA EOC in the post-incident designation of facilities for use as Mass Care Shelters.
2. Enter into written agreements with the American Red Cross and the County of San Diego concerning the use of facilities and each year provide an updated 24-hour emergency contact for each facility.
3. Insure that building maintenance, and if required, food service personnel are provided in those facilities opened as Mass Care Shelters.

San Diego County Office of Education

1. Assist School Districts in the development of Standard Operating Procedures to facilitate "furnishing and maintaining such services as the governing board may deem necessary to meet the needs of the community." (Reference: Section 40041.5, Education Code).
2. Annually provide two copies of the directory of schools and school districts in San Diego County to both the Office of Emergency Services and the local American Red Cross.

All Affected Agencies and Organizations

Responsibilities of all other affected agencies and organizations are as follows, where appropriate:

1. Prepare Standard Operating Procedures (SOP) for response to Care and Shelter Operations, including a system for automatic personnel reporting and disaster assignment.

2. Train personnel and alternates.
3. Each city shall designate a representative for the Care and Shelter Subcommittee of the Unified Disaster Council. This representative should maintain an active involvement with the Care and Shelter Subcommittee of the Unified Disaster Council.

IV. Functions

Activation and Termination

Activation Conditions: This Annex is activated when a real or potential emergency or situation exists in which Mass Care is required.

Activation Authority
Activation of this Annex shall be by the direction of:

1. The County's Chief Administrative Officer (CAO), or designated Assistant CAO, in the capacity of Director of the Unincorporated area, or as Operational Area Coordinator of the Unified San Diego County Emergency Services Organization; or
2. The Director of HHSA, County of San Diego; or
3. The Director, San Diego County Office of Emergency Services (OES); or
4. The Incident Commander; or
5. The Emergency Services Director or the designee of any jurisdiction signatory to the Emergency Services Agreement; or
6. The Manager of Response, or designee, American Red Cross, San Diego/Imperial Counties Chapter.

Termination
Termination of this Annex shall take place once there is no longer a threat to community members, and all displaced residents are able to find alternate lodging. The care and shelter provider must indicate that there is no need for this Annex to remain activated.

V. Notification And Communication

Notification

Responsibility for notifying the American Red Cross of an incident requiring Shelter Operations rests with the Incident Commander/Scene Manager of the agency in charge at the scene of the incident. Procedures for alerting and notifying the American Red Cross should be incorporated into departmental Standard Operating Procedures. Each department with potential for being an Incident Commander/Scene Manager should establish procedures for notifying the American Red Cross during emergency and disaster situations.

Notification shall consist of access to the Incident/Scene Commander for current situation intelligence, including human resource and information needs and ongoing updates. This information should include incident type, Command Post locations, Incident Commander/Scene Commander's name, number of persons affected, estimated duration, communications frequencies in use and specific requests of American Red Cross. Notification can also be initiated by the Office of Emergency Services.

Should the American Red Cross be unable to respond, the Office of Emergency Services Staff

Duty Officer must be notified immediately to activate the County Shelter Team Program.

Communications

Communications in support of Care and Shelter Operations are primarily determined by the available infrastructure (i.e. Land-line, Cellular phones, etc…). However, when these methods are not available, the use of Radio Amateur Civil Emergency Service (RACES) through the Sheriff's Department when available, could be dispatched to shelter facilities in order to relay information to the OA EOC. The alternate form of communications for the San Diego/Imperial Counties Chapter of the American Red Cross is a commercial trunk UHF radio system. The American Red Cross also works closely with the San Diego County RACES group by providing an amateur radio operator liaison to them. This relationship provides the American Red Cross a direct link to the OA EOC in the event of a major disaster resulting in communication outages.

VI. Administration Of Mass Care

In coordination with the Care and Shelter Branch Coordinator or designee, the American Red Cross will determine where mass care facilities will be needed and which facilities are suitable.

The American Red Cross will initiate shelter openings, assign shelter staff, and request that the opening of American Red Cross shelters and mass feeding centers be announced through the Emergency Alert System (EAS) or other established public information channels.

First Aid and Health Services

1. Medical services and basic emergency First Aid will be provided in all shelters either by American Red Cross Disaster Health Services, County of San Diego Public Health Nursing, or the County of San Diego Medical Reserve Corps.
2. The task of medical services in the shelters is to promote health, to prevent disease, to treat minor illnesses and injuries, and to refer for the care of the seriously ill and injured.
3. San Diego County HHSA, Behavioral Health Services will be available to provide crisis counseling at identified sites, if requested (refer to Annex M).

Resources and Support

All requests for mass care assistance should be requested through the OA EOC Care and Shelter Branch Coordinator(s) as required. This could include requesting trained personnel, emergency services support, or assistance in securing supplies.

Records and Reports

1. The American Red Cross is responsible for the maintenance of mass care records, specifically the Shelter Resident Registration form. Even in a County Shelter, the forms will be provided to the American Red Cross for safe keeping and to provide a quicker mechanism for follow-up.
2. As requested by the Care and Shelter Branch Coordinator, American Red Cross will share statistics on care and shelter operations which do not violate their client confidentiality requirements.

Closing Shelters

Shelters will remain open until victims can return to their own homes, make their own arrangements for shelter, or until an alternate longer-term housing plan is implemented.

ATTACHMENT A

SAN DIEGO COUNTY CARE AND SHELTER SUBCOMMITTEE OF THE UNIFIED DISASTER COUNCIL

American Red Cross

County Health and Human Services Agency

County Office of Emergency Services

County Office of Education

County HHSA, Behavioral Health Services

County Fire Coordinator

County Law Coordinator

County HHSA, Public Health Services

City Care and Shelter Coordinators (18)

ATTACHMENT B

SAN DIEGO COUNTY CARE AND SHELTER COORDINATORS

City	Title of Designee
Carlsbad	*
Chula Vista	*
Coronado	*
County of San Diego	Director, Health and Human Services Agency
Del Mar	*
El Cajon *	
Encinitas	*
Escondido	Assistant Director, Community Services
Imperial Beach	*
La Mesa	*
Lemon Grove	*
National City	*
Oceanside	*
Poway	Assistant Director, Department of Community Services
City of San Diego	*
San Marcos	*
Santee	*
Solana Beach	*
Vista	*

***To be identified by the local Jurisdiction**

ATTACHMENT C

UNDERSTANDING BETWEEN THE UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION AND THE SAN DIEGO COUNTY CHAPTER OF THE AMERICAN RED CROSS

Purpose

This understanding defines the cooperative relationship existing between the San Diego County Chapter of the American Red Cross and the Unified San Diego County Emergency Services Organization in preparing for and dealing with disasters and other emergency situations. It is designed to implement, at a local level, those agreements reached at federal and state levels between the American Red Cross, the Defense Civil Preparedness Agency, and the State of California Office of Emergency Services.

Recognition

The San Diego County Chapter of the American Red Cross (hereinafter referred to as American Red Cross) recognizes the Unified San Diego County Emergency Services Organization as a special purpose body created by mutual agreement between and among the County of San Diego and the cities in the county, to perform extraordinary functions for both city and county governments in planning for and during the time of disaster.

The Unified San Diego County Emergency Services Organization recognizes American Red Cross as a volunteer disaster relief agency chartered by Congress through which the American people extend assistance to individuals and families affected by disaster. The American Red Cross does not assume responsibility for government functions but supports the work of government authorities in alleviating the results of disaster.

Cooperation And Coordination

American Red Cross and the Unified San Diego County Emergency Services Organization responsibilities in natural disasters have a close relationship. In order to achieve effective operations, avoid duplication of effort, and to ensure that all disaster needs are met, it is essential that the employment of all available resources be coordinated.

Therefore, it is agreed that:

1. Cooperative arrangements for planning, exchange of information and continuing liaison regarding preparedness for disaster operations will be maintained. Upon activation of the emergency plan, American Red Cross will provide liaison personnel at the Primary Decision Center, field operations center (assistance center), and such other disaster operational headquarters as may be designated.
2. During natural disasters, the American Red Cross will carry out its responsibilities in coordination with the Unified San Diego County Emergency Services Organization.

Special emphasis will be placed upon Mass Care Service with mutual selection, staffing and equipping of congregate care facilities. Additionally, American Red Cross will assist the Medical and Health Service, to the extent practicable, in the handling of mass casualties and the selection, staffing and equipping of Emergency Aid Stations.

3. Regardless of responsibility, whenever there is suffering and want from any cause, and basic human needs are not being met, American Red Cross will participate in community action in extending relief.

4. Although American Red Cross responsibilities in civil disturbance and war-caused disaster are clearly defined, American Red Cross will incorporate its activities, to the extent possible, and continue to serve as a component of the Unified San Diego County Emergency Services Organization with administrative and financial responsibility resting with the local government.

Signatory

COUNTY OF SAN DIEGO

By: Kathryn A. Nelson
Asst. Clerk of the Board of Supervisors

Approved by the Board of Supervisors of the County of San Diego

APR 10 1979 #14

Kathryn A. Cremmans
Clerk of the Board of Supervisors

Ralph Kruft
Disaster Chairman,
San Diego County Chapter
American Red Cross

APR 10 1979
Date approved

S L Bailey
Chairman,
San Diego County Chapter
American Red Cross

APR 10 1979
Date approved

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL
Paul N Bamer
DEPUTY

ATTACHMENT D

MEMORANDUM OF UNDERSTANDING BETWEEN THE AMERICAN NATIONAL RED CROSS AND THE STATE OF CALIFORNIA DEPARTMENT OF SOCIAL SERVICES

Purpose

A. To recognize the respective roles and responsibilities of the American National Red Cross (herein referred to as the ANRC) and the State of California Department of Social Services (herein referred to as the DSS) in disaster preparedness planning and operations for natural and war related disasters, nuclear accidents, other emergencies, and civil disorders;

B. To serve as a basis for mutual understanding and collaboration by which the resources of the ANRC and the DSS can be most effectively brought to bear for the relief of all persons affected by the above-mentioned types of disasters;

C. To reaffirm that the ANRC and the DSS will discharge their respective responsibilities as described in the State of California Emergency Plan and as the ANRC is mandated to do by Congressional Charter and described in the Statement of Operational Relationships between the ANRC and the California State Office of Emergency Services (herein referred to as the OES); and

D. To recommend working relationships between American Red Cross chapters and county welfare departments.

Legal Basis For Operational Relationships

A. The ANRC is mandated by Federal law as defined in 36 USC-5 to undertake activities for the purpose of mitigating the suffering caused by natural disasters and other emergencies. The ANRC does not have the power to surrender the mandate created by its charter. This responsibility has been restated in the Federal Disaster Relief Act of 1974 (Public Law 93-288) and is recognized in the Statement of Operational Relationships between the ANRC and the California Office of Emergency Services.

B. DSS and state government responsibilities derive from the California Emergency Services Act, the California Emergency Plan and Administrative Order 79-35.

Role Of The ANRC

A. In all natural disasters and other emergencies the ANRC provides relief assistance in accordance with its established policy, procedures, and guidelines and as described in the Statement of Operational Relationships between ANRC and OES.

B. The ANRC response in disasters does not require a governmental declaration of any type. Regardless of the size of the disaster or the number of families

affected, all assistance will be provided on a uniform basis. All ANRC assistance to disaster victims is an outright gift. No payment is ever required or requested and no ANRC supplies are ever sold.

C. In time of major disasters or other emergencies, ANRC recognizes DSS as a resource for staff whose skills are readily adaptable to ANRC relief assistance programs.

D. ANRC will provide training for state and local DSS staff who may be assigned to ANRC operations.

E. In time of disaster ANRC will provide transportation and maintenance to DSS staff assigned to ANRC operations when duties are performed away from their local jurisdiction.

F. The ANRC may act for or in behalf of local, State or Federal government disaster assistance programs on a purchase of services or other mutually acceptable reimbursable basis.

Role Of The Department Of Social Services

A. The DSS recognizes that in time of natural disasters the ANRC has the primary responsibility for meeting urgent and emergency needs of disaster victims by providing food, clothing, shelter in congregate care or other facilities, welfare registration and inquiry, and other basic elements for human comfort and survival.

B. DSS will coordinate the capability of all county welfare departments to respond to disasters of all types as outlined in state legislation and will coordinate support from other state agencies.

C. DSS will continue to provide usual public assistance services during a disaster situation or a declared emergency.

D. DSS will provide needed staff, as available, to assist ANRC in disaster operations. DSS staff may also be given time off to participate in ANRC training courses. Staff salaries and benefits will be provided by DSS in both preparedness training and operational assignments of DSS staff.

E. The provision of Emergency Welfare Services falls within the authority of state supervised-county administered public Social Services. In the event of an officially declared state of emergency, and pursuant to the rules and regulations of the California Emergency Council, all state, regional and local government employees will become disaster workers; duties may include support of the American National American Red Cross.

F. The DSS will work with the ANRC in time of disaster in the coordination of other private agencies.

Administrative And Financial Controls

A. It is basic ANRC policy that administrative and financial control of its disaster related services cannot be delegated or assumed by others (as per ARC 3000 Series). Individuals and organizations, including government, cannot represent ANRC without prior agreement with and approval by ANRC.

Other Functional Understandings

A. The ANRC has agreements with a number of United States Government agencies, including the U.S. Department of Defense, for the obtaining and shipment of essential equipment and personnel to supplement emergency operations.

B. The ANRC may enter into contracts with public and private agencies, on a reimbursable basis, to provide ANRC support in rendering assistance to victims in emergency situations (e.g., Repatriation of Refugees).

C. The ANRC will support, to the best of its ability, State and Federal efforts to alleviate suffering in war-caused disaster situations.

Other Provisions

A. This Memorandum of Understanding shall become effective on date of signature below and shall remain in effect until 30 days after either party gives notice to the other party that it desires to terminate or modify the agreement.

B. This Memorandum of Understanding does not supersede or replace the existing Statement of Operational Relationships between ANRC and the OES dated October 26, 1979.

APPROVED October 29, 1982

Gilbert R. Tills, Manager
Western Field Office, ANRC
Burlingame, California

APPROVED October 18, 1982

Marion J. Woods, Director
Department of Social Services
State of California

ATTACHMENT E

STATEMENT OF OPERATIONAL RELATIONSHIPS BETWEEN THE AMERICAN RED CROSS AND CALIFORNIA OFFICE OF EMERGENCY SERVICES (This statement supersedes all previous agreements.)

Purpose

This statement will:

A. Outline the natural disaster program of the American Red Cross and the Office of Emergency Services, which coordinates the emergency activities of all state agencies;

B. Show the relationship between the Office of Emergency Services (OES) and the American Red Cross (ARC) in conducting these programs;

C. Recommend working relationships between American Red Cross chapters and local emergency (civil defense and disaster) organizations* for natural disasters; and

D. Include an attachment defining ARC activities for war disaster and civil disturbance. (This information is treated separately because of distinct legal and operational differences.)

Legal Basis For Operational Relationships

A. The OES, local government, and ARC are among the several agencies having statutory responsibilities in connection with natural disasters.

B. American Red Cross responsibilities derive from Public Law 4 (33 Stats. 599).

C. The OES and local government responsibilities derive from the California Emergency Services Act and related codes, ordinances, resolutions, agreements, and plans.

D. Nothing contained in the California Emergency Services Act is construed to alter the ARC statutory obligations.

Basis For Agreements Concerning Natural Disasters

A. ARC and OES responsibilities in natural disaster have a close relationship. Therefore, ARC Western Field Office and the American Red Cross California divisions and chapters will plan and act in unison with the OES, the emergency plans of the state and local governments, pertinent federal statutes, and this agreement.

***The term "civil defense" connotes government response to an emergency. References throughout this statement to state and local civil defense are synonymous with state and local governments.**

B. This unified action denotes coordination between government and the American Red Cross but does not impose any administrative authority or fiscal control by government or its emergency organizations over the American Red Cross organizations, its policies, volunteers or employees.

American Red Cross Program In Natural Disaster

In accordance with the foregoing statements, the ARC will provide and finance services to meet human needs in natural disaster. Specifically, these services, extended on a grant basis, are listed and explained in paragraphs A and B below

A. In Non-Presidentially declared disasters the services consist of:

1. Emergency Congregate Care (frequently termed Mass Care) which includes the:
    a. Provision of emergency lodging for disaster victims in public or private buildings available for congregate care occupancy.
    b. Provision of food and clothing for persons in emergency congregate care facilities.
    c. Provision of food for disaster workers if normal commercial feeding facilities are not available.
    d. Provision of welfare inquiry service.
    e. Provision of blood and blood derivatives to hospitals and clinics for treatment of persons ill or injured as a result of a disaster.
    f. Provision of medical and nursing care in American Red Cross shelters and operational facilities.
2. Emergency Individual Assistance, which is given on the basis of uniform guidelines and procedures to individuals and families having urgent and verified disaster-caused needs, and which include funding for:
    a. Food and clothing for disaster victims on an individual basis.
    b. Rental of temporary housing; comfort and toilet articles; fare for payment of commercial transportation or the operation of personally owned vehicles; cleaning and laundry supplies; and other basic necessities.
    c. Minor emergency home repairs essential to making home habitable.
    d. Essential items of household furnishings such as bedding, towels, linens, table and chairs, repair/replacement of stoves, refrigerators, washing machines, and mattresses, springs and bed frames.
    e. Emergency medical assistance, such as replacement of eyeglasses, dentures, prescriptions, etc.
    f. Essential occupational supplies and equipment.

3. Additional Assistance which is given after the emergency period, is based on individual application and is designed to help families or individuals effect part or all of their recovery when they lack sufficient resources (which include the ability to borrow from commercial or government agencies or arrange credit buying). This program, based on need, not loss, includes the following types of assistance:

    a. Food, clothing and maintenance.

    b. Construction, purchase or repair of owner-occupied homes.

    c. Extended medical and nursing care.

    d. Household furnishings.

    e. Occupational supplies and equipment.

B. In Presidentially declared major disasters - The American Red Cross programs may be modified according to the availability of certain government benefits. The potential modifications are as follows:

1. During the emergency phase the federal disaster program of food stamps, unemployment insurance, mini home repairs, short-term rental and mortgage payments may be rapidly available, reducing to some extent the need for all Red Cross emergency assistance described in paragraph A,2 above.

2. During the long-range recovery phase, the additional needs of disaster victims, described in paragraph A,3, may be met by state and federal disaster assistance programs provided by the Disaster Relief Act of 1974 (Public Law 93-288). The American Red Cross gives or augments additional assistance only when a victim's total recovery needs cannot be met through the combined resources of state and federal assistance programs.

State And Local Government Responsibilities In Natural Disasters

State and local governments have inherent and statutory responsibilities in mitigating the effects of natural disaster. The more important of these responsibilities are as follows:

A. Disseminating of danger warnings.

B. Designation of dangerous areas.

C. Ordered evacuation from endangered areas.

D. Law enforcement.

E. Fire suppression.

F. Light and heavy rescue operations.

G. Safeguards to public health and sanitation.

H. Identification and disposition of the dead, including the operation of temporary morgues.

I. Institutional care for the sick, aged, and orphaned.

J. Repair and restoration of public facilities and buildings.

K. Debris removal from public property.

L. Salvage of unclaimed property.

M. Arrangements with federal agencies for assistance under federal disaster relief programs.

Coordination Of Health, Medical And Welfare Programs

A. Public Health and Sanitation

1. Government is responsible for public health and sanitation. Public health authorities should arrange health inspection and sanitation controls in American Red Cross shelters.

B. Medical Care of Disaster Victims

1. The primary responsibility for the care of ill and injured disaster victims is vested in local emergency organizations by reason of disaster ordinances and plans. The American Red Cross will supplement medical requirements when local resources and additional mutual aid resources are exhausted. The supplementation may be as follows:

   a. The recruitment of nurses to augment hospital staffs.

   b. The assignment of nurses to hospitals for individual bedside care of disaster victims.

   c. The establishment of first-aid stations.

C. Welfare Programs

1. The American Red Cross considers tax source benefits provided by state and local welfare departments (and other state and federal agencies) for disaster victims as resources, and the American Red Cross will not duplicate or underwrite these programs.

Natural Disaster Operating Principles

A. Financing

An American Red Cross principle is that its administrative and fiscal controls are inseparable. Therefore, the American Red Cross does not assume costs for commitments made by other agencies or organizations.

B. Personnel

1. In some instances, individuals represent both government disaster organizations and American Red Cross Disaster Committees. Dual representation is inadvisable because of conflicting administrative and financial responsibilities.

2. When the ARC is incorporated into the disaster plans of the state or local governments or is asked by them for a specific disaster assignment, the American Red Cross volunteers involved may be registered as disaster workers and thus become eligible for workmen's compensation benefits

authorized by the California Emergency Services Act.

C. Supply

1. The American Red Cross does not stockpile large quantities of supplies for disaster preparedness. Its requirements are met by purchase, rental, or borrowing. The American Red Cross will assume fiscal responsibility for loss, damage, or destruction of all equipment under its operational control, unless otherwise agreed to by the vendor of loaned or rented property.
2. The ARC has an agreement with the Department of Defense and the Coast Guard for obtaining military supplies, equipment and personnel to supplement its disaster activities and is financially liable for certain services, and for loss, damage, or destruction of borrowed material. Therefore any government or private agency request for military assistance, including air or surface transportation for accumulation of used clothing and other commodities, should not be channeled through the American Red Cross.

D. Communications and Liaison

1. The ARC will provide liaison personnel at OES state headquarters, affected mutual aid regional offices, and the civil defense and disaster operations headquarters of affected local governments, to the extent necessary to carry out the terms of this agreement.
2. The ARC will furnish or authorize the use of the communications necessary to effective liaison.

E. Disaster Declaration

The ARC response to disasters does not require a declaration of any type. Therefore American Red Cross divisions and chapters will act in numerous situations which constituted government may not consider sufficiently severe to proclaim the existence of a disaster. When minor disasters occur wherein only a few families are affected and the local chapter cannot finance relief costs, the National organization will provide funding for relief assistance.

Approved: Oct 26 1979

Gilbert R. Tills, Manager
Western Field Office, ARC
Burlingame, California

Approved: October 26, 1979

Alex R. Cunningham, Director
Office of Emergency Services
State of California

ATTACHMENT F

MEGA-SHELTER OPERATIONS

Introduction

Hurricane Katrina and the 2007 Southern California Firestorms have proven the significance of an infallible emergency plan for mass evacuations. In the event of a prolonged disaster, the government may need to activate and operate a mega-shelter. A mega-shelter is a major facility that is used to house thousands of evacuees from a major disaster area. Attachment F of Annex G is a standard operating procedure for the establishment and operation of a mega-shelter in San Diego County. It is a conglomeration of "best practices," lessons learned, and standards from valuable resources such as the International Association of Assembly Managers (IAAM), the American Red Cross (ARC), and the 2007 Southern California Firestorms After-Action Report.

Mega-Shelter Activation/Termination

The selection and activation of a Mega-Shelter site is facilitated by the Activating Authority outlined in Annex G. All efforts should be taken to ensure that the facility meets safety, health, and security standards and/or indicators:

- Air-Conditioned
- Back-up Power Supply
- Adequate Restroom Facilities
- Adequate Area for Feeding Sheltered Population
- Located on Public Transportation Route
- Meet Americans with Disabilities Act Accessibility Guidelines

In the event of an earthquake, contact the following personnel for facility inspections:

- City's Development/Engineering/Maintenance and Inspection Department of the designated facility's jurisdiction
- County of San Diego Department of General Services

Within the San Diego County Operational Area are various facilities that could potentially be utilized as a mega-shelter. As planning continues, each facility will undergo a hazard-analysis inventory to determine its vulnerability to differing disasters. MOUs with the said facilities will be pursued at a later date. The following is a list of potential sites for a mega shelter facility within San Diego County:

San Diego Convention Center 111 W. Harbor Dr. San Diego, CA 92101

Petco Park 100 Park Blvd. San Diego, CA 92101

Qualcomm Stadium 9449 Friars Rd. San Diego, CA 92108

San Diego Sports Arena 3500 Sports Arena Blvd. San Diego, CA 92110

San Diego State University (Cox Arena) 5500 Canyon Crest Dr. San Diego, CA 92182

University of San Diego (Jenny Craig Pavilion) 5998 Alcala Park San Diego, CA 92110

University of California San Diego (RIMAC Arena) 9500 Gilman Dr. San Diego, CA 92093

Del Mar Fairgrounds 2260 Jimmy Durante Blvd. San Diego, CA 92014

The Activating Authority will coordinate the shelter contracts, liabilities, and reimbursements through the Operational Area Emergency Operations Center (EOC). Upon activation, a Shelter Manager will be appointed in which he/she will review the Shelter Manager Handbook located at the Operational Area EOC, and commence shelter operations.

NOTE: Termination of the mega-shelter operations will commence after the Activating Authority has officially secured from the disaster situation, and normal phase-down and deactivation operations have been completed.

Organization

The functional organization structure of a mega-shelter operation is shown in Figure G.F. 1.

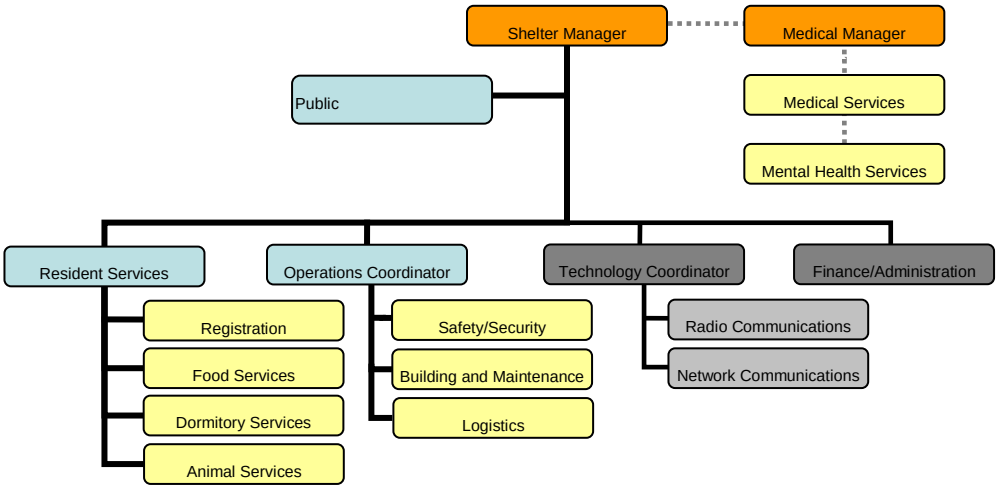

Figure G.F. 1

Shelter Manager – Responsible for overall operations at the mega-shelter. Will coordinate resources and services with the appointed directors and report to the Care and Shelter Coordinator at the Operational Area EOC. Shall be a San Diego County government representative.

Medical Manager – If activated, will be responsible for the coordination and operation of medical services. Will maintain communications and provide updates to the Shelter Manager. Shall be a representative from the San Diego County Health and Human Services Agency.

Resident Services Coordinator – Responsible for the coordination and operation of shelter resident services. Will report all updates to the Shelter Manager and maintain communications with appropriate directors. Shall be a San Diego County representative, or from the American Red Cross.

Operations Coordinator – Responsible for coordinating services vital to shelter operations.

Will report updates to the Shelter Manager and maintain communications with appropriate directors. Shall be a San Diego County government representative.

Technology Coordinator – If activated, will be responsible for the coordination and operation of technology services. Will report all updates to the Shelter Manager. Shall be a San Diego County Technology Office representative.

Finance/Administration Coordinator – If activated, will be responsible for finance and administration services. Will report updates and make requests through the Shelter Manager. Shall be a San Diego County government representative.

Public Information/Relations Coordinator – Responsible for establishing and maintaining effective relations with the public, the media, facility clients, shelter partners and shelter residents. Will report all updates to the Shelter Manager. Shall be a representative from the San Diego County Department of Media/Public Relations.

Mega-Shelter Operations

Registration Services

The Resident Services Coordinator will coordinate assistance and oversee the following services:

1. Evacuee Registration – Registration shall be conducted at a dedicated entry point in order to maintain flow of operations. Different colored wristbands will be used to identify the resident's accessible areas.
2. Spontaneous Volunteer Registration – Registration, credentialing and tracking of all volunteers for mega-shelter operations shall be held at an alternate site to ensure proper credentialing procedures. A form of identification will be utilized to identify volunteers.

Food Services

The Resident Services Coordinator will coordinate assistance with the appropriate agencies to provide the following services:

Kitchen Management – Cook and prepare all meals for shelter residents and volunteers.

- All Kitchen units abide by local, State, and Federal sanitation codes.
- The projected food is forecasted within the initial 24-48 hours. Prepare only the quantity of food sufficient for immediate use.
- Food temperatures are kept within appropriate ranges to preserve their quality. Store and maintain food outside the temperature danger zone (TDZ) of 41° F and 135° F.
- Food or water from unapproved sources ARE NOT ACCEPTED.

Catering Management – Ensure that all food and beverages are served in a safe and efficient manner.

- All catering staff has received required training, including safe food handling, and possesses appropriate qualifications to deliver feeding services.
- A designated dining area is established. Food is not permitted outside the area.
- Require all residents to sanitize hands before entering the food service line.

Beverage/Snacks Management – Provide beverages and snacks for the facility to shelter residents, volunteers, and staff.

- Beverages and snacks should be available 24/7.
- Water quality must meet all applicable local, state, and federal sanitation standards.

Nutrition Management – Ensure that foods are consistent with individual needs and dietary recommendations of USDA Guidelines.

- Provide a daily diet of at least 2,000 calories with sufficient amounts of vitamins and nutrients.
- When able, strive to serve meals that meet the cultural and ethnic needs of the shelter population.
- Ensure that serving sizes for meals are 8 oz. entrées, 6 oz. side dishes and 6 oz. desserts, measured in volume. Establish standard meal service times. Avoid serving food after 8:00 pm.

Shelter Resident Services

The Resident Services Coordinator will coordinate assistance with the appropriate agencies to provide the following services:

Lodging – The essential supplies to sustain life in a mega-shelter include:

- Cots/ air mattresses
- Pillows & Blankets
- First aid supplies
- Personal care products
- Sanitation supplies
- Hand/bath towels, antibacterial hand soap
- Diapers
- Baby food, infant formula
- Infant care products

Laundry – Coordinate with various agencies/organizations.

Pet and Large Animal Services – Shelter and feed animals for shelter residents.

- Plan and establish a safe but separate environment for pets at the mega-shelter. Household pets are not permitted to reside in the shelter.
- Service animals will be allowed into the shelter to assist their owners; however, the owner should be prepared to care for the animal.
- When necessary, identify a location, may be offsite, to house large animals.

Provide Information – Provide periodic briefings to shelter residents.

- When appropriate, provide access to media regarding situation of disaster.
- Schedule regular briefings, when possible have law enforcement/ fire officials available.

Spiritual Care Services and Crisis Counseling – Provide services and counseling.

- Spiritual care services and counseling should be provided at identified sites.

Recreation – Provide recreational activities.

- Board games, playing cards, books, and stuffed animals would be a welcome diversion for children.
- Family movies can be played on independently run screens.
- If the mega-shelter is expected to be open for more than a week, an entertainment schedule should be created.

Social Services – Provide information on local services, if available.

- Flyers should be readily available to provide the following information:
  a. Job opportunities
  b. Banking needs
  c. Pharmacies and hospitals (for services not provided on-site)

Transportation – Provide information regarding possible transportation modes for evacuees to/from shelter facilities.

Quality Control – All personnel
It is the responsibility of all personnel to assess and report quality control issues that may be detrimental to the morale, welfare, or safety of shelter residents.

Public Information and Shelter Relations

The Public Information/Relations Coordinator will coordinate with the appropriate agencies to provide the following services:

Information flow – Ensure accurate, timely information is provided to the Operational Area Emergency Operations Center, Joint Information Center.

Public Relations – Coordinate media events and coverage
The following information should be determined:

A. Designated parking at the facility for all media vehicles
B. Press conference area
C. Spokesperson for the facility
D. Press release writer for the facility
E. Telephone policy for dealing with the media
F. Drop-off location for special appearances
G. Holding location for VIP's while awaiting PIO
H. Communication plan to include facility, Red Cross, and FEMA
I. Maintain communications with the Shelter Manager.

Resident Relations – Provide disaster recovery assistance to shelter residents
In coordination with the American Red Cross, FEMA and other shelter partners, provide shelter residents with information pertaining to temporary housing and other financial assistance programs.

Booths should be established that provide the following information to residents:

A. The status of disaster and relief efforts
B. List of repopulations as they occur
C. Status of family members (if possible)
D. Types of available assistance
E. A general map of the facility
F. Information on bus and trolley times
G. A list of Frequently Asked Questions
H. Announcements and Updates

Shelter Partner Relations – Coordinate resources/services from supporting agencies. Establish relations with the multiple nonprofit agencies and faith-based organizations to augment services for the mega-shelter operation.

Medical Services

If activated, the Medical Manager will coordinate with the appropriate agencies to provide the following services:

Assessment Team – An assessment team will assess the medical conditions of evacuees to determine the priority of medical attention/services required.

Medical Clinic – Assess the need and coordinate personnel for the following medical services:

A. Basic First Aid
B. Primary care
C. Nephrology
D. OB/GYN
E. Ear, Nose and Throat
F. Pediatrics
G. Optometry
H. Orthopedics
I. Psychology

Assess the need and coordinate the following medical staff:

A. Physicians
B. Mental Health Counselors
C. Nurses
D. Emergency Medical Technicians (BLS and ALS)
E. Dentists
F. Physicians Assistants
G. Nurse Practitioners

Medical Transportation – Provide transportation for medical patients to surrounding hospitals and other care facilities.

Morgue – The San Diego County Medical Examiner will assess and facilitate the proper handling of deceased victims at the mega-shelter.

Functional Needs – The Resident Services Coordinator should coordinate with the medical staff on-site to provide the necessary other-than-medical-services for residents with functional needs.

Mental Health Services

When needed, the Medical Manager will coordinate with the appropriate agency to provide crisis counseling at identified sites. If necessary, extended services can be collaborated with community partners.

Technology Services

When activated, the Technology Coordinator will coordinate with the appropriate agencies to provide the following services:

Radio Communications – Provide radios and certified radio operators.

- Assign radio frequencies to designated talk groups.
- Identify and map locations of radio infrastructures to maintain continuity of communications.
- Assign and distribute radios to essential personnel.
- Ensure large inventory of spare radio batteries and harnesses for replenishment.

Network Communications – Provide computer and network services to mega-shelter facility

- Assess the resource compatibility with existing technology services
- Install and configure laptops, facsimile and scanning devices, printers, PDA's, pagers, and 3C video conferencing equipment as necessary.
- Provide network and data support to system operators.

Telephone Banks/Internet Connection Centers/Message Centers – Phone banks, internet connection centers, and a message board for should be established for shelter residents in order to allow communications with loved ones.

- Phone banks should be located in the dormitory area as well as in the services area.
- 24 phones/1,000 residents.
- Internet communication centers should be located in an area that can be locked.
- Message center should be a large wall, dry erase board, or chalk board, and in a central location near the dormitory.

Building Maintenance

The Operations Coordinator will coordinate with the appropriate agencies to provide the following services:

General Repairs – Coordinate facility repairs with the facility manager/maintenance director.

Custodial Services
Cleaning crews should be posted at each restroom using a ratio of one person for every eight toilets/urinals. Normal and customary cleaning schedules should be maintained.

Neoprene rubber gloves and tongs that are 12 inches long should be distributed for protection. Anti-bacterial soap should be distributed throughout the facility.

Custodians and housekeepers should be trained to handle trash cautiously to make sure that they protect themselves against hazards such as needles, blood, stool, and vomit.

Every four hours, cleaning crews should clean the following surfaces in each restroom:

A. Walls, up to 8 ft. high
B. Partitions
C. Doors and knobs
D. Counters and face bowls
E. Mirrors
F. Floors, including around and in back of toilets and urinals
G. Trash cans and Diaper bins, cleaned inside and out after each change
H. Urinals and Toilets
I. Diaper changing stations
J. Hand towel surfaces
K. Faucets
L. Showers

The following areas, throughout the facility, should be cleaned at least once a day:

A. Hand rails, including escalators
B. Door knobs and panic hardware throughout
C. Water fountains
D. Public telephones
E. Walls, up to eight feet high
F. Resident living areas
G. Computer keyboards
H. Floors and steps
I. Exterior sidewalks near the facility

Security Services

The Operations Coordinator will coordinate with the appropriate agencies to provide the following services:

Dormitory Security
Foot patrols to increase visibility should be used to prevent any criminal activity in both the perimeter and the interior of the facility.

Shower times should be extended to 24/7 if necessary to provide convenient access to residents. Security should include a staff member(s) near the designated shower area(s).

A procedure for residents to make complaints about misconduct of all types should be established. Law enforcement officials should be notified of such activities immediately.

External/Perimeter Security
Security posts should be in the outermost areas of the facility, including areas designated for parking, reception, and triage.

Posts should be at all entrances to the facility. An aggressive screening process should be employed utilizing the devices necessary to detect prohibited items.

All doorways leading into the facility that are not declared to be access points should be manned to ensure re-direction through the authorized security checkpoints.

Devices such as bicycle barricades can be used to facilitate an orderly queue of evacuees and assist in processing large numbers of people.

A secured area designated for smoking should allow persons to flow back into the facility without re-screening. Barriers may be used to keep this area secure.

Exceptions to the access rule should be made for facility employees, ARC employees, volunteers, medical staff, etc.

At the authorized access points, a sign listing all of the shelter rules including but not limited to prohibited items, reentry times, and applicable policies should be displayed to encourage compliance. In some cases, signs may need to be in other languages.

Traffic and Parking Operations
The Traffic Coordinator should develop a traffic/parking plan so that traffic, parking, and security are organized, safe, and efficient.

Parking should be predetermined for the following working agencies:

A. Facility Staff

B. American Red Cross Staff

C. City/County/Government Officials

D. Medical Staff

Items to be taken into consideration: delivery locations, media traffic and parking, and emergency response accessibility.

Inventory Control

The Operations Coordinator will coordinate with the appropriate agencies to ensure the following:

Designate a Distribution/Receiving Center (parking lot, or secured area)

A. Site should be able to be locked or fenced off to establish a security zone

B. Should be away from arterial entry points

C. Establish shift supervisors to control/oversee bulk inventory

D. Pre-position assets for ease of inventory and accessibility

E. Create a list of fork lift operators, drivers, laborers

Determine the need and priority of bulk items.

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX H

Environmental Health Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX H

Environmental Health Operations

ACKNOWLEDGEMENTS

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San Diego County Office of Emergency Services

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ANNEX H
ENVIRONMENTAL HEALTH OPERATIONS

I. General

The Environmental Health Operations Annex to the San Diego County Operational Area Emergency Plan describes the basic concepts, policies and procedures for providing environmental health services in the event of a disaster. This Annex serves as the unifying environmental health document for the County of San Diego and the cities in the County as authorized by the Emergency Services Agreement.

Note: This Annex is not applicable for incidents at the San Onofre Nuclear Generating Station (SONGS). For all events at SONGS, refer to the San Diego County Nuclear Power Plant Emergency Response Plan.

Purpose

To establish emergency environmental health operations, assign responsibilities, and provide actions and responses to environmental health problems associated with disasters.

Goal and Objectives

The overall goal of environmental health operations during a disaster is to:

Minimize loss of life and human suffering, prevent disease, and promote optimum health by controlling environmental factors.

The overall objectives of environmental health operations during a disaster are to:

1. Provide leadership and guidance in all environmental health-related incidents.
2. Provide environmental health protection measures.
3. Provide guidance in food handling, mass feeding and sanitation in emergency facilities.
4. Inspect and advise on general sanitation matters.
5. Coordinate environmental health-related activities among other local public and private response agencies and groups.
6. Assist with damage assessments.

Concept of Operations

There are three levels of Emergency Operational Center (EOC) activation during a disaster. These levels are based on the nature and severity of the situation and the availability of resources. These three levels are described in the Basic Plan.

Plan Activation and Termination

Activation and termination of this Annex shall be by the direction of (1) the County's Chief Administrative Officer (CAO) in that capacity, or as Emergency Services Coordinator of the Unified San Diego County Emergency Services Organization; or (2) a designated Assistant CAO; or (3) the Director, Office of Emergency Services or designated representative; or (4) the Director, Department of Environmental Health or designated representative.

Upon activation, the DEH Director determines the extent of environmental health services needed for response to the disaster and activates the DEH Departmental Operations Center (DOC). The DEH-DOC will coordinate all environmental activities for DEH and relay the activities to the Operational Area EOC (OAEOC) environmental health desk.

II. Organization

Operational Area EOC

The San Diego County EOC serves as the OA EOC and performs the same function as the city EOCs, with the Chief Administrative Officer (CAO) serving as Director of Emergency Services. The CAO also functions as the Emergency Services Coordinator for the Operational Area.

The Operational Area EOC is located at the County Operations Center, and is used as the central point for resource acquisition and allocation, as well as coordination. The Environmental Health Section of the EOC is normally activated when the EOC is activated at a level 2 or 3. It is staffed by pre-designated environmental health personnel who will coordinate the environmental health response for the Operational Area. The EOC environmental health staff serve as advisors to the Emergency Services Coordinator, the Management Section, coordinate all activities with the DOC, and make decisions about resource allocation, priorities and other public environmental health matters.

1. Emergency Services Coordinator – Directs or coordinates the Emergency Services Organization and the emergency management program. In a disaster located entirely within the County unincorporated area, the CAO is the Director of emergency operations. In a disaster involving more than one jurisdiction, the CAO serves as the Coordinator of emergency operations.
2. Director, Department of Environmental Health (DEH) – Reports to the CAO and is primarily responsible for providing and coordinating the provision of countywide environmental health and sanitation services. The Director of DEH, identifies environmental health problems, and coordinates activities with public works agencies, fire departments, and utilities (sewage, water, etc.). The Director advises the Emergency Services Coordinator of the need for mutual aid.
3. Assistant Director, Department of Environmental Health (DEH) – Reports to the Director of Environmental Health and is primarily responsible for coordinating the oversight of environmental health services. The Assistant Director acts for the Director when necessary, identifies environmental health problems, and directs and

coordinates the Division Chiefs in resource allocation and service delivery. Additionally, the Assistant Director coordinates activities with public works agencies, public health, fire departments, and other public service providers.

City Emergency Operations Centers (EOC)

Each city has a central facility designated as an EOC. From the EOC, disaster operations are directed or coordinated. It is activated when a disaster occurs and is staffed by city employees from departments with emergency responsibilities, as well as liaison representatives from other agencies and jurisdictions. City EOC's communicate/coordinate their actions with the OAEOC during disasters.

City plans may call for an environmental health liaison representative to be present when their EOC is activated. In each city, the Mayor, City Manager or their designee is designated as Director of Emergency Services by ordinance and directs or delegates emergency operations from the EOC.

DEH Departmental Operations Center (DOC)

The Department of Environmental Health Departmental Operations Center (DEH-DOC) supports the OAEOC. The DEH-DOC is staffed based on the level of emergency. The staff at the DEH-DOC have the following roles or responsibilities:

Management section - DOC Manager.

A. To activate the DEH-DOC at the direction of the Director of Environmental Health and oversee all activities of the DEH-DOC to ensure environmental priorities are being addressed and completed.

B. Provide briefing to the DEH-DOC.

C. Communicate with the OAEOC environmental health duty desk.

Public Information Officer (PIO)

A. Formulate and release approved information about the incident that could be released to the news media and other agencies.

B. Works in conjunction with the Joint Information Center operating through the OAEOC.

Safety Officer

A. To develop and recommend measures for assuring personnel safety, accountability and to assess and/or anticipate hazardous and unsafe situations.

B. Responsible for developing DEH safety plans specific to the disaster.

Operations Section Chief

A. Supervise the environmental assessment teams to ensure the operational objectives are achieved.

Planning Section Chief

A. Collection, evaluation, dissemination and use of information about the development of the incident and status of resources. Information is needed to understand the current situation, predict probable course of incident events, prepare alternative strategies and control operations for the incident.

Situation Status

A. Monitor the information about the development of the incident and status of resources.

Geographic Information Systems (GIS)

A. Generate situation maps for planning and operations use.

Logistics Section Chief

A. Manage those units responsible for power, equipment, facilities and personal needs in support of the incident and DOC needs.

B. Coordinates activities and resource requests with the Logistics section of the OAEOC.

Finance Section Chief

A. All financial and cost analysis aspects of the disaster, payments and the reimbursement efforts.

B. Issue activity codes to track payroll records of DEH staff operating in support of the emergency.

III. Roles And Responsibilities

San Diego County Department of Environmental Health

1. Writes and updates the Environmental Health Annex H and any other emergency environmental health plans and procedures.
2. Coordinates environmental health disaster operations within the Operational Area.
3. Develops and maintains a capability for identifying environmental health resources within the Operational Area.
4. Coordinates all environmental health related activities among other local public and private response agencies or groups, as well as state and federal agencies.
5. Requests and responds to requests from the Regional Disaster Medical Health Coordinator and the Health and Human Services Agency (HHSA) DOC for disaster assistance.

Environmental Health

1. All Divisions
    A. Prepare Standard Operating Procedures (SOPs) and functional checklists for environmental health response to a disaster, including a system for automatic reporting of pre-designated personnel to assigned disaster posts. This information is maintained in the DEH Disaster Preparedness Plan (DPP).
    B. Train personnel and alternates.
2. Community Health Division
    A. Vector Control Program
        1. Establishes methods and procedures for vector control activities to include the control of flies, mosquitoes, human body pests, and ectoparasites.
        2. Develops and supervises methods and procedures for control of rodents.
        3. Coordinates disposal/removal of dead animal activities with Animal Control services to minimize vectors such as flies ectoparasites and rodents.
        4. Conducts surveys and surveillance to determine the potential for vector-borne disease transmission and control measures needed to prevent and control vectors.
    B. Vector Borne Disease Laboratory
        1. Test submitted specimens for vector-borne zoonotic diseases.
        2. Communicate diagnostic test result information to vector control and public health staff.
        3. Implement animal quarantine when necessary to control animal reservoirs of zoonotic diseases.
        4. Develop disease prevention recommendations and strategies as they pertain to animal vectors and animal disease reservoirs.
        5. Assist with the coordination of the safe disposal of contagious animals and vectors.
        6. Train staff in biology, risks and personal protection from new and emerging vector-borne pathogens.
    C. Radiological Health Program
        1. The Senior Radiological Health Physicist coordinates actions with the California Radiological Health Branch (RHB).
        2. Advises on radioactive contamination of the environment and the population.

3. Assists with the coordination of radiation monitoring teams as well as decontamination activities.
4. Advises on control measures and recovery efforts from radiological incidents.
5. Advises the DEH Director of the need for administration of potassium iodide (KI) or other radiation preventative measures for emergency workers. The Director relays those recommendations to the County Public Health Officer.

NOTE: Appendix II discusses emergency response to various radiological incidents.

D. Occupational Health Program

1. Assist in the evaluation of County facilities for safe occupancy following a disaster.
2. Assist the Department of General Services with ventilation issues in County buildings during/following a disaster.
3. Conduct air monitoring (for asbestos, lead, mold, smoke/dust etc.) as needed.
4. Provide recommendations to County employees regarding personal protective equipment.
5. Provide health and safety training to County employees.
6. Assist Department of Human Resources with worker's compensation claims investigations relating to the disaster.
7. Assist Departments with employee protection issues for pandemic and other biological hazards.

E. Solid Waste Local Enforcement Agency (LEA)

1. Approves emergency waiver requirements of State standards and permit conditions for solid waste operators to accept disaster-related solid waste.
2. Processes and issues approvals for temporary Emergency Transfer/Processing Operations and Emergency Construction and Demolition/Inert Debris Processing Operations.
3. Monitors the storage, handling, and disposal of solid waste within the LEA's jurisdiction.
4. Inspects the disposal of special wastes, such as food waste generated from mass feeding centers and quarantines, and human waste generated from lack of sanitary facilities. The proper collection and disposal of human waste from emergency toilet facilities may have to be disposed of at sanitary landfills or specially prepared and selected sites, including excavations or fill and cover sites if the sewer treatment facilities are not in operation.

5. Monitors the potential migration of landfill gas due to damaged gas control systems or emergency construction activities adjacent to landfills.

3. Food and Housing Division

   A. Provides information on food, pool, and housing safety including the salvaging and protection of perishable foods under emergency conditions.

   B. Conducts food-borne and water-borne illness outbreak investigations in coordination with HHSA.

   C. Inspects and advises on general food safety for impacted permitted food facilities, mass feeding centers, and temporary emergency shelters, including damaged and spoiled food, and food from approved sources.

   D. Assists with conducting assessments of emergency shelters and advises on health and safety hazards related to food, sanitation, and housing.

   E. Assists building departments with the damage assessment of permitted multi-family dwelling units in areas where DEH is the housing authority.

   F. Conducts damage assessments to identify impacted public swimming pools that may pose an imminent safety threat.

   G. Provides guidance to permitted food facilities, mass feeding centers, and emergency shelters that may be impacted by boil water orders, power outages, and water outages.

4. Hazardous Materials Division

   A. Conducts damage assessments to identify any hazardous materials, including biological substances released at permitted facilities due to a natural disaster.

   B. Evaluates the risks that the hazardous substances may pose to the general public and environment if released.

   C. Advises on mitigation measures necessary to modify or reduce adverse conditions effecting public or environmental health.

   D. Coordinates environmental health mitigation and response activities with other public and private response organizations. Federal funding for clean-up. Reporting and funding for clean-up. Reporting and access to state and federal funding/stabilization

   E. Provides assessment of underground storage tank systems to determine the integrity of the systems after a natural disaster.

   F. Coordinates a joint response within the operational area to mitigate and control chemical, biological and radiological emergencies.

5. Land & Water Quality Division

A. General

1. Determines the risks and hazards for the disposal of sewage where the public may come in contact or where it may contaminate drinking water supplies.
2. Establishes quarantine areas in the event of sewage contamination.
3. Evaluates sources of water for use as a potable water supply. Issues boiled water orders as needed for compromised small water systems.
4. Confirms the sanitary transportation and treatment of water to be used as a potable water supply and verifies that the water is potable prior to consumption.
5. Coordinates the provision of temporary measures for the collection of and the sanitary disposal of human waste and other refuse.
6. Assists building departments with the damage assessment of residential family dwelling units in county unincorporated areas.
7. Enforces Health and Safety code with regards to substandard housing within the Unincorporated County and contract cities.

B. Site Assessment

1. Conducts environmental surveys to determine the extent of releases from underground storage tanks and other chemical contamination sources.
2. Evaluates the risks posed to public health and water resources from hazardous substance releases.
3. Advises on mitigation measures necessary to mitigate hazardous substance releases from abandoned or contaminated sites.
4. Coordinates site assessment and mitigation activities with other public agencies and private entities.

Office of Emergency Services (OES)

1. Assists with environmental health disaster planning and training.
2. Coordinates, through the Logistics Section, efforts to obtain resources both within the county and out of the county, including supplies and logistical support.
3. Requests and obtains, via the Logistics Section, military assistance in accordance with established protocols and procedures.
4. Activates, manages, and staffs the Operational Area EOC.
5. Assists with recovery efforts, particularly in obtaining state and federal reimbursement funds.

State (see Attachment A)

1. Responds to requests for resources from the Operational Area.
2. The Director, State Department of Health Services, serves as the State Director of Public Health and has the overall responsibility of coordinating statewide disaster environmental health operations and support requirements.

Federal (see Attachment B)

1. Public Health Service

A. Assists state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.

B. Assigns professional and technical personnel to augment state and local forces.

2. Food and Drug Administration

A. Works with state and local governments in establishing environmental health controls through the decontamination or condemnation of contaminated food and drugs.

IV. Functions

Food Safety

Due to damage to restaurants, grocery stores, and residences, mass feeding centers and/or emergency shelters will be used to maximum capacity. Some food facilities may attempt to continue to operate following an emergency. Maintaining food safety at these facilities will be a high priority. Several aspects of food safety will require monitoring to prevent the food-borne illnesses. These functions may include:

1. Providing guidance on food safety.
2. Surveying the food delivery system to prevent food contamination or spoilage.
3. Conducting inspections as needed to ensure food is prepared and served in a manner to minimize the risks of food-borne illnesses.
4. Monitoring and investigation of feeding centers and shelters for illnesses and outbreaks.

5. Advising permitted and non permitted food facilities on required food safety modifications
6. Providing assistance to food facilities with continuing to operate under emergency conditions will be advised of any required food safety as needed.

Sanitation

Several aspects of waste disposal and solid waste management will need supervision to prevent the spread of disease. These may include:

1. Inspection of pumping trucks used to remove liquid wastes.

2. Inspection of sewage disposal units including community trench latrines, pit privies, and mobile latrines or chemical toilets.

3. Inspections of organic and inorganic waste at mass feeding and care facilities

4. Inspection to ensure proper disposal of collected waste in an approved landfill or by burial, incineration or open dumping as a last resort.

Vector Control

Vectors are organisms that transmit disease or cause annoyance. Vectors are present in virtually every environment, and at times are involved in the transmission of serious diseases, particularly under crowded or poor sanitary conditions. Vector Control Program functions during disasters may include:

1. Mapping of vector sources to determine the extent of infestations, potential for disease occurrence, level of nuisance to be eliminated, and amount of damage to be expected.
2. Identification, control and elimination of mosquito and fly breeding sources and rodent and cockroach infestations.
3. Implementation of a vector awareness education program to enhance public cooperation.

Vector-Borne Disease Diagnosis

During a disaster, the Vector-Borne Disease Diagnostic Laboratory conducts the following functions as necessary:

1. Test insect vectors and animal disease reservoirs for zoonotic pathogens.
2. Implement or develop new diagnostic tests for emerging vector borne diseases.

3. Monitor status of emerging and reemerging vector borne diseases at local, state, federal and international levels.
4. Coordinate diagnostic responses with appropriate local, state and federal agencies (Public Health, Centers for Disease Control and Prevention).
5. Assist with epidemiologic investigation of vector borne disease outbreaks in vectors, animals or people.

Emergency Water Supply

During emergency conditions, most major water districts have emergency and mutual aid agreements to try to supply water to the most critical needs. Where potable water sources may be limited, Environmental Health functions to:

1. Provide proper health and disinfection information when alternate water resources are used, such as trucked-in water, use of agricultural wells, streams, pools and ponds.
2. Provide proper health and disinfection information for potable water sources at Field Treatment Sites, mass feeding and housing and shelter areas.
3. Assist the Public Health Laboratory by sampling water supplies to test for the presence of Coliform bacteria or other suspected contaminants.

Hazardous Materials Division

The Hazardous Materials Division (HMD) of the Department of Environmental Health is trained and equipped to respond to hazardous materials incidents associated with a chemical, biological or radiological emergency. Through an agreement between the Unified Disaster Council members, HMD and the City of San Diego Fire-Rescue Department, the Joint Hazardous Incident Response Team (HIRT) was formed to provide a regional response program, serving the San Diego County Operational Area.

Upon activation, a responding unit will proceed to the incident site and coordinate with other on-site agencies under the operations section.

HMD will assist the designated Incident Commander as requested and will provide the following services as needed:

1. Conduct environmental surveys to identify the hazardous materials and wastes.
2. Continuously monitor the status of the incident to determine the population at risk, the effect on environmentally sensitive areas, and the impact to economically sensitive areas.
3. Conduct field sampling to determine the extent of contamination in soil, water, or air.
4. Conduct on-site screening for identification of chemical unknowns.

5. When feasible, mitigate and stabilize a hazardous materials release to protect the health and safety of the population around the incident.
6. Provide laboratory analysis of unidentified hazardous materials that may adversely affect individuals, the general public, or the environment, on an as needed basis.
7. Provide health and safety information to all response agencies and act as an on-site safety officer as necessary.
8. Assist the Incident Commander in determining the necessity for area evacuation and/or post incident site entry.
9. Make recommendations to the Incident Commander and other private or public response agencies concerning methods to be used in spill control, cleanup and site restoration.
10. Evaluate the adequacy of final site clean up and help coordinate the removal of the hazardous materials.
11. As necessary, assist the Incident Commander in obtaining outside financial aide and other resources from State and/or Federal agencies to help in any environmental cleanup in the absence of a responsible party.
12. Provide technical information concerning the characteristics of released or spilled substances to the medical and other response agencies having need of such information.

NOTE: Responses to a significant oil spill impacting, or with the potential to impact, the San Diego Operational Area are addressed in the San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan.

Land and Water Quality Division

The Land & Water Quality Division (LWQD) of the Department of Environmental Health regulates water and wastewater issues, mobile home parks, substandard housing, monitoring and drinking water wells, and onsite wastewater disposal systems. In the event of an emergency, LWQD staff will be able to expedite the review of emergency plans for the repair or reconstruction of private drinking water wells, small water system wells and onsite wastewater disposal systems.

LWQD will assist other departments and divisions in the following ways:

1. Provide technical information concerning the characteristics of released or spilled substances from underground storage tanks and other facilities containing hazardous substances and evaluate remediation strategies and the final site cleanup.
2. Expedite the review of plans for the repair of onsite wastewater disposal systems and drinking and monitoring wells.
3. Assist in the inspection of mobile home parks in the unincorporated areas and contract cities for safety and habitability.

4. Assist with conducting environmental surveys of permitted and un-permitted establishments for releases of hazardous substances, septic wastes, and non-potable drinking water supplies.
5. Assist in the inspection of tenant occupied structures to determine if substandard conditions exist.

Radiological Health Protection

During a disaster involving a radiological (nuclear) incident the DEH-HMD's Incident Response Team (HIRT) and the CHD Senior Health Physicist will coordinate with the County of San Diego's Public Health Officer and assist as follows:

1. Monitoring radiological exposure and environmental contamination.
2. Coordinate with other local, state, and federal monitoring teams
3. Decontamination of personnel and property
4. Advise on the need to administer potassium iodide (KI) or other radioactive preventative measures.

NOTE: Additional information regarding the response to radiological incidents is found in Appendix II.

Local Enforcement Agency

The County of San Diego, Solid Waste Local Enforcement Agency (LEA) regulates solid waste issues in the County before and after disasters that impact solid waste handling and disposal. The California Department of Resources Recycling and Recovery can/has adopted regulations for the LEA to provide the following:

1. Maximize the availability of handling, processing, transportation, storage, and disposal capacity through the period of increased need during emergencies.
2. Provide trained staff to monitor any potential public health and safety issues related to the migration of landfill gas.
3. Coordinate issues and environmental concerns related to solid waste and disposal sites with other regulatory agencies, the operator/owners, and the community. These issues may include odors, noise, dust, extended operating hours and changes in permitted tonnages at disposal sites and transfer stations, site security, vectors, and landfill gas.
4. Investigate and monitor solid waste issues in the general community related to commercial storage and illegal solid waste facilities and operations.

Occupational Health Section

1. Assists the Department of General Services in the evaluation of County facilities for safe occupancy following a disaster,
2. Assesses ventilation issues in County buildings,
3. Conducts air sampling for asbestos, lead, mold, smoke and dust, etc. as necessary,
4. Provide recommendations to County employees regarding personal protective equipment,
5. Assist the Department of Human Resources with worker's compensation claim investigations relating to the disaster,
6. Assist other Departments of the County of San Diego with employee protection issues for pandemic and other biological hazards.

Resources

The Department of Environmental Health develops and maintains a capability for identifying specific resources that are helpful to DEH within the Operational Area. Additionally, the Department of Environmental Health, through the Logistics Section of the Operational Area EOC, is responsible for the procurement, allocation and distribution of all environmental resources required to support environmental health operations.

Environmental Health Disaster Preparedness Plan (EHDPP) includes information, Standard Operating Procedures and checklists to facilitate a disaster environmental health response. The following information is included in the plan:

- Notification and Recall Lists of Environmental Health Personnel
- Environmental Health Emergency Telephone Numbers
- Designated Amateur Radio Operators
- Hazardous Material Haulers and other Emergency Transportation Resources
- Septic Tank Pumpers
- Emergency Chemical Toilet and Portable Restroom Suppliers
- Location of Emergency Water Supplies
- National Guard Resources (Public Health specific)
- Water Purveyors
- List of Analytical Laboratories
- Pesticide Emergencies Reference List
- Miscellaneous Support Agencies
- Chemical and Biological Sampling Devices

For Radiological Health Protection, the following information is available:

- Members of Radiation Monitoring Teams
- Location of Field Monitoring Equipment
- Location of Potassium Iodide and Issue Log Sheets
- Hospitals with capability to handle ill or injured patients contaminated with radioactive material (coordinated with the Health and Humans Services Administration of the County of San Diego)

NOTE: The EHDPP is maintained by the Department's Disaster Coordinator with the assistance of the Division Chiefs. The Plan can be accessed in the DEH s: drive

ATTACHMENT A

STATE RESPONSIBILITIES

The Director, State Department of Public Health, serves as State Director of Public Health and will have the overall responsibility for coordinating statewide disaster environmental health operations and support.

The following state agencies have varied capabilities and responsibilities for providing support to environmental health disaster operations.

Department of Health Services (DHS) or Department of Public Health (CDPH)

DHS is primarily responsible, under the State Director of Public Health, for the administration and coordination of a statewide disaster environmental health program. This includes coordinating, supervising, and assisting those essential services required to do the following.

1. Assure availability of safe drinking water.
2. Prevent and control communicable disease.
3. Provide technical assistance in the safe operation of sewage collection, treatment, and disposal systems.
4. Assure prevention and control of vectors, including flies, mosquitoes, and rodents.
5. Assure observance of health aspects in management of solid waste disposal, including proper disposal of dead animals and human remains.
6. Assure safe management of hazardous wastes, including handling, transportation, and disposal.
7. Ensure safety of emergency supplies of food and other products.
8. Ensure rapid restoration or replacement of facilities for processing, storing, and distributing food, and other products.
9. Rapidly establish measures to mitigate damage to environmental health from radiological accidents, including providing technical assistance, safety criteria for recovery, re-occupancy, and rehabilitation of contaminated areas.
10. Provide support to the California Air Resources Board in carrying out the public health aspects of the California Air Pollution Emergency Plan.

Department of Food and Agriculture

1. Administers programs for the control and eradication of diseases, pests or chemicals affecting animals, poultry or crops.
2. Provides information on the protection of human and animal food from contamination by harmful residues or chemicals.

California Environmental Protection Agency - Air Resources Board

1. Develops plans to prevent substantial endangerment to the health of persons by anticipating and preventing or abating air pollution emergencies.
2. Coordinates the execution of air pollution emergency plans with OAEOC and Regional Air Pollution Control Districts, State OES and other public agencies.
3. Coordinates the monitoring of air quality and issues bulletins consistent with public safety as required by the Department of Health Services.

California Environmental Protection Agency - State Water Resources Control Board

1. Ensures safe operation of sewage collection, treatment, and disposal systems.
2. Provides water quality advice and support in emergency operations.

California Department of Resources Recycling and Recovery (CalRecycle) [formally known as California Integrated Waste Management Board]

1. Ensures proper disposal of solid wastes.
2. Adopted regulations for LEA's to provide maximum availability for the proper disposal of solid waste during emergencies.

ATTACHMENT B

FEDERAL RESPONSIBILITIES

The Department of Health and Human Services, operating under its own statutory authority or following a Presidential Declaration of an EMERGENCY, may provide disaster environmental health services.

Public Health Service

Has the primary federal responsibility for activities associated with health hazards resulting from emergencies and will:

- Assist state and local communities in taking protective and remedial measures for ensuring sanitary food and potable water supplies; adequate sanitary systems; rodent, insect, and pest control; care of sick and injured; and control of communicable disease.
- Assign professional and technical personnel to augment state and local forces.

Food and Drug Administration

Works with state and local governments in establishing public health controls through the decontamination, recall, or condemnation of contaminated food and drugs.

Policies and Procedures

1. If local resources (both public and private) are inadequate to cope with the situation(s), required support will be requested through the Operational Area EOC to the appropriate California Emergency Management Agency (CalEMA) Mutual Aid Regional Emergency Operations Center (REOC). If the requirement cannot be met through resources available within the counties in the Region, the REOC staff or Director will request assistance from the State Operations Center (SOC) in Sacramento who will then forward the request to the California Department of Public Health for assistance.
2. The provision of Federal resources prior to a Presidential emergency declaration, under the authorization of the Robert T. Stafford Disaster Relief and Emergency Assistance Act 42 U.S.C. §5191-5193 (The Stafford Act), is justified where prompt action is essential for the protection of life and property. After a Presidential declaration is made, and upon instructions from the Director, Region IX, Federal Emergency Management Agency, Federal agencies will make their resources available to support local and state emergency public health and sanitation efforts.

APPENDIX I-1

DEPARTMENT OF ENVIRONMENTAL HEALTH
GENERAL EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Conduct field survey to detect damage to water and sewage systems.	DEH
Locate and check status of potable water sources	DEH

IF LITTLE OR NO DAMAGE IS REPORTED, PREPARE TO SUPPORT MORE HEAVILY DAMAGED JURISDICTIONS.

IF EXTENSIVE DAMAGE IS REPORTED, TAKE THE FOLLOWING ACTIONS AS REQUIRED (Water, Sewage, Food, Housing, others

Assist in the development of emergency community water supplies.	Land & Water Quality (LWQD)
Provide technical information on water disinfection and storage of water supplies.	LWQD
Coordinate with Logistics and Finance after water has been purchased to test and confirm the water is potable.	LWQD
Supervise the development of new and repaired water systems.	LWQD
Conduct field survey to detect damage to onsite wastewater disposal and sanitary sewer systems.	LWQD
Direct and advise on the use of emergency chemical toilets, portable restrooms and other temporary facilities for the disposal of human wastes.	LWQD
Direct and advise the public on the proper collection and disposal of human wastes from chemical toilets, portable restrooms, latrines, emergency toilet facilities and private homes.	LWQD
Supervise the development of mass housing and sewage disposal facilities.	LWQD

Provide sanitation inspection services in emergency facilities.	LWQD
Conduct inspections to ensure the proper collection and disposal for human waste for mass housing and feeding facilities.	LWQD/FHD
Provide information on food, pool, and housing safety under emergency conditions.	FHD
Conduct food-borne and water-borne illness outbreak investigations in coordination with Health and Human Services Agency (HHSA).	FHD
Inspect and advise on general food safety, for impacted permitted food facilities, mass feeding centers, and temporary emergency shelters.	FHD
Assist with conducting assessments of emergency shelters and advise on health and safety hazards related to food, sanitation, and housing.	FHD
Assist the building departments with the damage assessment of permitted multi-family dwelling units in areas where DEH is the housing authority.	FHD
Conduct damage assessments to identify impacted public swimming pools that may pose an imminent safety threat.	FHD
Provide guidance to permitted food facilities, mass feeding centers, and emergency shelters that may be impacted by boil water orders, power outages, and water outages.	FHD
Provide information on the salvaging and protection of perishable foods under emergency conditions.	FHD/LWQD
Provide mutual aid when requested.	DEH
Establish methods and procedures for control of flies, mosquitoes, human body pests, and ectoparasites.	CHD
Develop and supervise methods and procedures for control of rodents.	CHD

Conduct surveys and surveillance to determine densities, species, distribution, disease-bearing, and control measures needed to prevent/control vectors.	CHD
Supervise disposal of radioactive waste.	CHD/HMD
Supervise radiological monitoring and decontamination (if required) of evacuees housed in emergency shelters and incoming patients in medical centers.	CHD/HMD
Assess risk to public health and safety and the environment from releases of hazardous materials.	CHD/HMD
Assess risk to public health and water resources from sewage releases.	LWQD
Assess risk to the public health and water resources from damage to public and private potable water supply wells and distribution systems.	LWQD
Coordinate risk assessment activities with other responsible agencies.	HMD
Assess risk to public health and water resources from hazardous material releases.	LWQD
Coordinate site assessment and mitigation activities with other agencies and private entities.	LWQD
Approve waiver requirements based on emergency regulations adopted by the California Department of Resources Recycling and Recovery.	CHD
Review the handling and acceptance of solid waste with solid waste haulers and disposal site operators.	CHD
Monitor the storage, handling and disposal of solid waste.	CHD
Monitor the potential migration of landfill gas.	CHD
Inspect the collection, storage, land disposal of all garbage and refuse.	CHD

Assist County Departments performing damage assessments with health and safety issues (e.g., personal protective equipment [PPE], asbestos, lead, sampling, etc.).	CHD
Assist Department of General Services with issues at County buildings.	CHD

APPENDIX I-2

DEPARTMENT OF ENVIRONMENTAL HEALTH EMERGENCY ACTION CHECKLIST RESPONSE TO A HAZARDOUS MATERIALS INCIDENT

Action	Responsibility
Coordinate with the Medical Examiner, on health problems associated with the disposition and decontamination of the dead.	HMD
PRELIMINARY ASSESSMENT	
Conduct environmental surveys to identify the hazardous materials released. Determine the population at risk and characterize the degree of hazard.	HMD
Determine if specialized monitoring and survey equipment is necessary to assess the risk.	HMD
Provide information acquired during surveys to monitor the fate of the release.	HMD
Provide risk assessment information to other agencies involved in chemical incidents.	HMD
EVALUATION/RISK ASSESSMENT	
Evaluate the risks that the hazardous substances pose to the general public and/or environment.	HMD
Continually monitor the migration of contaminates released during chemical emergency.	HMD
Determine any populations at risk.	HMD
Determine the impact to environmentally sensitive areas (i.e., endangered species and ecosystems).	HMD
Determine the impact to economically sensitive areas.	HMD

SAFETY/CONTROL

Make recommendations for control actions to modify or reduce impact.	HMD
Provide information on cleanup techniques and resources.	HMD
Can act as "site safety officer" during chemical emergencies.	HMD
Make recommendations for cleanup, restoration methods, and disposal of hazardous wastes.	HMD
Potentially mitigate the release to stabilize the scene and protect the public and environmental health and safety.	HMD

COORDINATION

Coordinate public health mitigation and response activities with other public and private response organizations.	HMD

APPENDIX I-3

DEPARTMENT OF ENVIRONMENTAL HEALTH EMERGENCY ACTION CHECKLIST RESPONSE TO IMMINENT/ACTUAL FLOODING

Flooding Expected

Action	Responsibility
Determine potential health hazards and establish standards for control.	DEH
Coordinates actions necessary to mitigate potential sewage releases caused by flood waters.	LWQD
Issue standby orders for self-contained chemical toilets or portable restrooms. When flooding may cause human waste disposal systems to become inoperable.	LWQD
Provides guidance and inspection of permitted food facilities, mass feeding centers, and emergency shelters.	FHD
Enlist additional personnel to handle increased vector control problems.	CHD
Identify buildings that contain hazardous materials.	HMD
Advise on mitigation and control measures. Take environmental samples to determine extent of contamination.	HMD

Flooding Occurs

Conduct survey to detect water and sewage system damage.	LWQD
Locate and check status of potable water sources.	LWQD
Provide guidance for the disinfection of transported water. Direct and advise on the use of chemical toilets and other temporary facilities for the disposal of human waste.	LWQD
Cordon off areas where sewage effluent is present.	LWQD
Coordinate mosquito and other vector control operations.	LWQD

Advise on mitigation control and clean-up measures.	DEH
Survey underground storage tank sites to determine if tanks have floated and if releases have occurred.	LWQD
Assess risk to public health and water resources from hazardous materials releases.	HMD
Coordinate site assessment and mitigation activities with other public agencies and private entities.	LWQD
Survey landfills and evaluate damage.	CHD
Survey transfer stations and evaluate damage.	CHD
Monitor the storage, handling and disposal of solid waste.	CHD
Provides information on the salvaging and protection of perishable foods under emergency conditions.	FHD
Inspects and advises on general sanitation matters, such as food safety and sewage disposal for impacted permitted food facilities, mass feeding centers, and temporary emergency shelters.	FHD
Conducts surveys to identify impacted public swimming pools that may pose a safety threat.	FHD
Assists building departments with the damage assessment of permitted multi-family dwelling units in areas where DEH is the housing authority.	FHD
Conducts foodborne and waterborne illness outbreak investigations in coordination with Health and Human Services Agency (HHSA).	FHD
Assist County Departments performing damage assessments with health and safety issues (e.g., personal protective equipment [PPE], mold, sampling, etc.).	CHD
Assist Department of General Services with County facilities (e.g., moisture mapping, mold, indoor air quality, decontamination)	CHD

APPENDIX I-4

DEPARTMENT OF ENVIRONMENTAL HEALTH EMERGENCY ACTION CHECKLIST RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

Dam Failure Imminent

Action	Responsibility
Coordinate actions necessary to mitigate potential sewage back-up caused by flood waters.	LWQD
Direct and advise on the use of chemical toilets and other temporary facilities for the disposal of human wastes.	LWQD
Provide guidance and inspect permitted food facilities, mass feeding centers, and emergency shelters.	FHD
Identify additional resources to handle increased vector control problems.	CHD
Enlist additional personnel to handle increased vector control problems.	CHD
Conduct surveys to determine adverse impact to facilities handling, storing, or disposing of hazardous materials.	HMD
Advise on mitigation, control, and clean-up measures involving hazardous material releases.	HMD

Dam Failure Occurs

Coordinate survey to detect water and subsurface sewage system damage.	LWQD
Provide damage assessment of potable water sources and Provide guidance on the disinfection of water source prior to consumption.	LWQD
Direct and advise on the use of chemical toilets and other temporary facilities for the disposal of human wastes.	LWQD
Provide information on food, pool, and housing safety under emergency conditions.	FHD
Inspect and advise on general food safety, for impacted permitted food facilities, mass feeding centers, and temporary emergency shelters	FHD

Assist with conducting assessments of emergency shelters and advises on health and safety hazards related to food, sanitation, and housing.	FHD
Assist building departments with the damage assessment of permitted multi-family dwelling units in areas where DEH is the housing authority.	FHD
Conduct damage assessments to identify impacted public swimming pools that may pose an imminent safety threat.	FHD
Provide guidance to permitted food facilities, mass feeding centers, and emergency shelters that may be impacted by boil water orders, power outages, and water outages.	FHD
Provide information on the salvaging and protection of perishable foods under emergency conditions.	FHD
Cordon off areas where sewage effluent is present.	LWQD
Provide mosquito and other vector control.	CHD
Advise on mitigation, control, and clean-up measures.	DEH
Conduct surveys to determine adverse impact to facilities handling, storing, or disposing of hazardous materials.	HMD
Survey underground storage tank sites to determine if tanks have floated and if releases have occurred.	LWQD
Assess risk to public health and water resources from hazardous materials releases.	HMD/LWQD
Coordinate site assessment and mitigation activities with other public agencies and private entities.	LWQD
Assist County Departments performing damage assessments with health and safety issues (e.g., personal protective equipment [PPE], mold, sampling etc.)	CHD

APPENDIX I-5
DEPARTMENT OF ENVIRONMENTAL HEALTH
EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FIRE

Action	Responsibility
Determine potential health hazards and establish standards for control.	DEH
Initiate actions to accommodate potential sewage releases caused by fire impacting collection, treatment, and disposal facilities.	LWQD
Direct and advise on the use of chemical toilets and other temporary facilities for the disposal of human wastes.	LWQD
Provide food safety guidance and inspection for mass feeding centers	FHD
Enlist additional personnel to handle increased vector control problems.	CHD
Identify buildings that contain hazardous materials.	HMD
Advise on mitigation and control measures. Take environmental samples to determine extent of contamination.	HMD
FIRE IMPACTS POPULATED AREAS	
Conduct field survey to detect damage to sewage collection and disposal systems.	LWQD
Provide damage assessment of potable water sources and provide guidance on the disinfection of water sources prior to consumption.	LWQD
Provide guidance drink ability of water in the area.	LWQD
Direct and advise on the use of chemical toilets and other temporary facilities for the disposal of human wastes.	LWQD

Provide information on food, pool, and housing safety under emergency conditions.	FHD
Inspect and advise on general food safety, for impacted permitted food facilities, mass feeding centers, and temporary emergency shelters.	FHD
Assist with conducting assessments of emergency shelters and advise on health and safety hazards related to food, pools, and housing.	FHD
Assist building departments with the damage assessment of permitted multi-family dwelling units in areas where DEH is the housing authority.	FHD
Conduct damage assessments to identify impacted public swimming pools that may pose an imminent safety threat.	FHD
Provide guidance to permitted food facilities, mass feeding centers, and emergency shelters that may be impacted by boil water orders, power outages, and water outages.	FHD/LWQD
Provide information on the salvaging and protection of perishable foods under emergency conditions.	FHD
Cordon off areas contaminated with sewage.	LWQD
Coordinate mosquito and other vector control operations.	CHD
Advise on mitigation control and clean-up measures.	HMD
Survey above and underground storage tank sites to determine if tanks have been impacted and if releases have occurred.	LWQD
Assess risk to public health and water resources from hazardous materials releases.	LWQD
Coordinate site assessment and mitigation activities with other public agencies and private entities.	HMD

Survey landfills and evaluate damage.	CHD
Survey transfer stations and evaluate damage.	CHD
Monitor the storage, handling and disposal of solid waste.	CHD
Assist County Departments performing damage assessments with health and safety issues (e.g., personal protective equipment [PPE], asbestos, lead, dust, air sampling etc.),	CHD
Assist Department of General Services with County facilities (e.g., indoor air quality, ventilation issues)	CHD

APPENDIX I-6

DEPARTMENT OF ENVIRONMENTAL HEALTH EMERGENCY ACTION CHECKLIST RADIOLOGICAL INCIDENT

Action	Responsibility
Ensure that operations are conducted from an upwind position.	Senior Health Physicist (SHP)
Determine the magnitude of the incident and establish perimeter to prevent spread of contamination.	HMD/(SHP)
Identify spilled or leaked substance. This would include locating shipping papers and placards and contacting, as required.	HMD/(SHP)
Take necessary steps to protect or save human life.	HMD/(SHP)
Establish perimeter controls to keep the public a safe distance from the scene.	HMD/(SHP)
Identify radioactive element involved in incident. Evaluate the radiological component of the hazard.	HMD/(SHP)
Re-evaluate perimeters as the radioactive element is identified and/or environmental conditions change.	HMD/(SHP)
Assist medical personnel in identifying, isolating and removing contaminated or injured persons from the scene.	HMD/(SHP)
Take action to contain and/or prevent the spread of the material.	HMD/(SHP)
Ensure proper notifications have been made.	HMD/(SHP)
Recommend evacuation or shelter in place as appropriate.	HMD/(SHP)
Maintain radiological exposure records on all emergency personnel.	HMD/(SHP)
Coordinate clean-up activities of private radioactive materials companies with Radiological Health Branch (RHB)	HMD/(SHP)

Advise Public Information Officer of specific radiological information that should be given to the public.	HMD/(SHP)

APPENDIX II

DEPARTMENT OF ENVIRONMENTAL HEALTH
RADIOLOGICAL PROTECTION

I. General

Introduction

This appendix establishes the basic operational concepts, responsibilities and techniques to support governmental efforts to save lives and minimize exposure to radiation in the event of a radioactive materials emergency. These emergencies may involve transportation accidents, industrial/medical facility accidents, Naval Nuclear Propulsion Program (NNPP) facilities or vessels*, or an incident at the San Onofre Nuclear Generating Station.

The basic capabilities required for response to a radiological emergency are:

A. Utilizing a radiation monitoring system to detect, measure and report radiation dose and exposure rates.

B. Trained staff to receive, analyze, and evaluate information provided by the monitoring teams.

Objectives

1. To establish organizational responsibilities and prescribe those actions required to provide timely and coordinated protective actions to minimize the loss of life and human suffering.
2. Provide a system for monitoring, reporting, processing and analyzing radiological data.
3. Provide technical support to implement radiological countermeasures and situation analysis.
4. Provide a system for receipt and dissemination of information required for effective response and recovery operations.
5. Provide a basis on which local jurisdictions can establish coordinated and supporting plans and Standard Operating Procedures (SOPs).

* See Appendix II-3 for more specific information on NNPP facility and vessel response.

Authorities and References

1. Federal Radiological Emergency Response Plan.
2. California Emergency Services Act.
3. California Emergency Plan.
4. California Health and Safety Code
    A. Control of Radioactive Contamination of the Environment (Division 20, Chapter 7, Sections 25600 - 25610).
    B. Transportation of Radioactive Materials Division 20, Chapter 7.3, Sections 25650 - 25654).
    C. Radiation Control Law (Division 20, Chapter 7.6, Sections 25800 - 25876).
5. California Administrative Code Title 17.
6. California Master Mutual Aid Agreement.
7. County of San Diego Emergency Services Ordinance No. 8183 dated December 15, 1992.
8. County of San Diego Resolution Adopting the California Master Mutual Aid Agreement, dated December 11, 1950.
9. NUREG - 0654/Rep 1, Criteria for Preparation and Evaluation of Radiological Response Plans and Preparations in Support of Fixed Site Nuclear Power Plants.
10. NUREG - 0610, Draft Emergency Action Level Guidelines for Nuclear Power Plants.
11. Agreement between the State of California and the Nuclear Regulatory Commission (NRC) pursuant to Section 274 of the Atomic Energy Act of 1954, as amended.
12. San Diego County Nuclear Power Station Emergency Response Plan
13. Commander Submarine Force U.S. Pacific Fleet Representative, West Coast Procedures for the Notification of the State of California in Support of the Radiological Emergency Plan for Naval Nuclear Propulsion Plants in the San Diego Area.
14. CPG 1-7 Guide for Increasing Local Government Civil Defense Readiness during Periods of International Crisis.
15. State of California Nuclear Blackmail Plan.

Coordination with Other Jurisdictions and Agencies

Although the response for radiological emergencies is addressed in various emergency plans, the basic policies and procedures for emergency operations remain unchanged from those used in response to other emergencies or disasters. In most cases, the responsibilities assigned in this annex fall within the normal purview of the organization(s) to which these assignments are made.

II. Concept Of Operations

Preparation for coping with a radiological emergency is a joint cooperative effort by local and state government, federal agencies and private organizations. Each organization or agency must define its role, prepare plans and procedures, train personnel, conduct exercises and develop and maintain the appropriate resources in order to ensure the capability to effectively coordinate with other agencies and to provide effective response to the emergency.

During the normal day-to-day operating mode, emphasis is placed on:

1. Developing plans, standard operating procedures (SOPs) and emergency checklists.
2. Training of Radiological Officers, Radiological Monitors and the Radiological Response Team. The Radiological Response Team for the San Diego County Operational Area is the Hazardous Incident Response Team (HIRT).
3. Identification of radiological threats or hazards.
4. Maintaining calibrated monitoring equipment.
5. Maintaining a supply of radiological survey instruments. This is accomplished by County OES and DEH.
6. Maintaining current list of facilities licensed to store and use radioactive materials.
7. Assist with isotope verification when a radiological source is detected by any responders (e.g. HIRT or the Small Vessel Project)
8. Developing and conducting drills and exercises for emergency personnel (both tabletop and functional exercises).

Emergency Response Phase

This phase begins with the threat of a release of radioactive material either from an incident at the San Onofre Nuclear Generating Station, a terrorist threat involving nuclear or radioactive materials, or other events such as major fires threatening facilities with large inventories of radioactive materials. Smaller incidents, such as those that may arise from transportation accidents, will usually be handled by DEH/HMD normal response procedures but may require full or partial implementation of this plan. Actions required during this phase may include:

1. Activating the Operational Area and local EOCs.
2. Reviewing/updating plans, SOPs and checklists.
3. Testing/inventory of equipment, supplies and facilities.
4. Distributing equipment to monitoring teams.
5. Dissemination of radiological protection guidance.
6. Providing radiological protection information to the public.
7. Assigning radiological monitors as necessary.

8. Activating medical care facilities, first aid stations, etc.
9. Activating emergency communications systems such as Radio Amateur Civil Emergency Service (RACES) and the Emergency Alert System (EAS).
10. Mobilization and pre-positioning of personnel and equipment.

Recovery Phase

Early Recovery

This phase continues the assessment of radiological hazards to determine if they are a threat to life or health. Detect exposure hazards, hazards from water sources and the food chain must be identified. Decontamination of critical facilities will be undertaken or coordinated.

Final Recovery

The objective is to restore the environment to a safe radiation level as quickly as possible. All areas will be carefully monitored to determine the degree of contamination with appropriate actions taken to reclaim such areas for human habitation and crop protection as soon as possible.

Activation

The Emergency Services Coordinator, or his/her designated representative (as outlined in the basic portion of Annex H), may direct this appendix be activated upon receiving information of an actual or potential radiological emergency in the Operational Area.

Upon activation, the Operational Area Radiological Officer (RO) will:

1. Receive, collate and assess data from the radiological monitoring teams.
2. Forward all radiological data, operational information and situation intelligence summaries to the Southern Regional State Operations Center (REOC).
3. Maintain dose and exposure records for emergency response personnel within the unincorporated area.
4. Ensure response personnel read their personal dosimetry equipment at appropriate intervals and in no case less frequently than once an hour.
5. Establish and maintain coordination with local government Radiological Officers, the Senior Radiological Health Physicist, and appropriate private agencies.
6. Advise senior decision-makers on the radiological situation.
7. Coordinate information with the Operational Area Public Information Officer (PIO) and the Joint Information Center (JIC).
8. Provide an Operational Area-wide overview of the radiological situation to officials and the public.

Radiological Monitoring Teams - Operate the radiological monitoring instruments and report the data. Each team consists of a minimum of two trained monitors.

1. Radiological monitors will be assigned as required.
2. Teams will assist or conduct the decontamination of personnel and property.

Emergency response personnel will not be permitted to receive radiation doses exceeding EPA protective action guides (PAGs) without the approval of the County Health Officer.

Emergency workers who may be exposed to high levels of radioactive iodine will be directed by the County Health Officer to take Potassium Iodide (KI). The purpose for administering KI is to limit the uptake of radioactive iodine by the thyroid. KI should not be issued to the general population since other methods will be employed to limit their dose.

Local Radiological Officers will perform those functions listed under the Operational Area Radiological Officer for their respective jurisdictions.

Deactivation

This Appendix will be deactivated at the discretion of the Emergency Services Coordinator or his/her designated representative.

III. Organization And Responsibilities

The Operational Area will respond to a radiological emergency as outlined in this plan and the Standard Operating Procedures (SOPs) for all-hazards emergency response. The San Diego County Nuclear Power Plant Emergency Response Plan (SDCNPPERP) will be used for events at the San Onofre Nuclear Generating Station.

Local Governments

The Emergency Services Director for each jurisdiction has ultimate responsibility for direction and control of that jurisdiction's response actions.

Each jurisdiction is responsible for:

1. Planning for the safety of employees and the protection of property in the event of a radiological emergency.
2. Coordinating plans and actions with other jurisdictions and agencies within the Operational Area.
3. Maintaining SOPs and call lists.
4. Training personnel assigned to emergency tasks.
5. Participating in drills and exercises.
6. Preparing damage and loss survey reports.

IV. Supporting Organizations And Responsibilities

State Agencies

1. California Emergency Management Agency (CALEMA)
    A. Provide radiological training.
    B. Organize and staff the State Dose Assessment Center.
    C. Manage state radiological fallout and monitoring system.
    D. Disseminate radiological intelligence.
    E. Evaluate monitoring data and advise those concerned.
    F. Act as liaison between Federal and local government.
    G. Provide technical guidance.
    H. Coordinate radiological recovery operations.
    I. Coordinate state agency assistance to local governments.
    J. Maintain the State Nuclear Power Plant Emergency Plan.
    K. Monitor and evaluate data, then advise those concerned.
2. CALEMA Southern Region Staff
    A. Function as an intermediate coordinating level (Regional EOC) between the Operational Area and the State Operations Center (SOC).
    B. Compile and transmit operational information and situation intelligence summaries to the SOC and Operational Areas.
3. Other State agencies that have responsibilities during a radiological emergency response are:
    A. Department of Public Health, Radiologic Health Branch
    B. Emergency Medical Services Authority
    C. California Highway Patrol
    D. California Department of Transportation (CalTrans)
    E. Department of Justice
    F. Department of Forestry and Fire Protection (Cal Fire)
    G. National Guard
    H. Department of Fish and Game (DFG)

Federal Agencies

1. Federal Emergency Management Agency (FEMA): Coordinate Federal response actions and agencies.

2. Other Federal Agencies: May assist by providing support or services as requested by State or Local governments.

APPENDIX II-1

RADIOLOGICAL PROTECTION
FIXED NUCLEAR POWER STATION EMERGENCY RESPONSE PLAN

PURPOSE

To develop and maintain a response capability to adequately safeguard life and property in the event of an incident at the San Onofre Nuclear Generating Station (SONGS).

CONCEPT OF OPERATIONS

The nature of the threat posed by SONGS coupled with the requirements of NUREG 0654 and those imposed by the Inter-jurisdictional Planning Committee dictate that a separate plan for this emergency be developed and maintained. The current plan for such an emergency is the San Diego County Nuclear Power Plant Emergency Response Plan adopted February 1982. That plan by reference is made a part hereof.

APPENDIX II-2

RADIOLOGICAL PROTECTION
NUCLEAR TERRORIST EMERGENCY RESPONSE PLAN

PURPOSE

To develop and maintain a response capability to minimize the threat to public safety caused by a terrorist action involving nuclear weapons or radiological material.

BACKGROUND

General

Terrorist activities around the world continue to increase in sophistication. More ominously, terrorist attacks appear to be aimed towards maximizing damage and publicity rather than the accomplishment of political goals. When this is combined with the fact that weapons grade nuclear material is becoming increasingly more common, the possibility of a terrorist act involving radiological and lower grade radioactive material nuclear weapons also increases.

Scenario

The scenario for a nuclear threat could begin with the theft of radiological material that would pose a health threat. Federal, state or local governments may be notified of the presence of a nuclear weapon by the terrorist organization.

Credibility

The credibility of the threat would depend on knowledge of any previous theft of radiological material or nuclear weapon and any knowledge of the nature of the terrorist group. The most important information required is an assessment of the ability of the terrorists to successfully detonate the weapon or radiological dispersion device (RDD). The FBI, Department of Defense (DoD), DOE, and other federal agencies assisted by state and local law enforcement organizations would perform evaluation of the situation.

CONCEPT OF OPERATIONS

Activation

Upon receipt of information of a radiological threat by a terrorist group, the Emergency Services Coordinator, or his/her designated representative, may proclaim a Local Emergency for the San Diego County Operational Area and activate the Operational Area EOC. Once a Local Emergency is proclaimed the Emergency Services Coordinator may request the Proclamation of a State of Emergency from the Governor.

Upon activation of the Operational Area EOC, radiological resources within the Operational Area will be mobilized to respond to the threat. The CalEMA will be notified through the CalEMA Southern Region.

Deactivation

This Appendix will be deactivated at the discretion of the Emergency Services Coordinator or his/her designated representative.

Response

The nature of the response would depend on:

A. Nature of the threat. It is possible that the terrorists may threaten to detonate the device if any public protective measures are taken.

B. Size of the threatened population and the length of time available for evacuation.

C. Size and type of weapon.

Protective measures may take two forms:

A. Evacuation of the population at risk.

B. Sheltering actions.

The situation will determine the best course of action. If the weapon is located in a heavily populated area and there is little time before the threatened detonation, evacuation may not be possible. In this case, protective, sheltering actions would be called for.

Effects of Detonation

The overall impact of the detonation of a single nuclear or RDD device would be devastating to the immediate area. However, the infrastructure of the Operational Area would remain intact, allowing for rapid rescue and decontamination actions.

All responders entering the Exclusion Zone around the blast area are to wear respiratory protection to protect themselves from airborne particles. This can include but is not limited to SCBA, CBRN certified respirators or even N95 rated Air Purifying Respirators.

Responders need to take appropriate protective actions by adhering to the principles of time, distance and shielding. Personal monitors should be used to measure their exposure to the radiation for the duration of the responses using appropriate equipment. Exposure to radiation should be maintained at less than 10 REM for the duration of the incident unless life saving efforts are underway. Then a one time maximum exposure level of 50 REM can be taken provided the responders are trained, not pregnant, and voluntarily responding according to the specific exposure level above.

While the immediate response actions would center around rescue and decontamination operations, equally important will be those activities aimed at preventing contamination of the water or food chain in outlying areas. Long range responses will include long term medical care and screening of survivors and emergency response personnel who have received exposure to radiation.

These activities may/will require federal and state resources.

APPENDIX II-3
RADIOLOGICAL PROTECTION
RADIOLOGICAL EMERGENCY ONBOARD A NAVAL NUCLEAR PROPULSION PROGRAM FACILITY OR VESSEL IN SAN DIEGO
(Unclassified Protocols)

PURPOSE

This document provides information about the Naval Nuclear Propulsion Program (NNPP) facilities and vessels located in the County of San Diego. It provides ready reference for NNPP related radiological emergencies that could occur at NNPP radiological work facilities, on nuclear powered vessels, or off-site transportation accidents that might have an impact on the public health and safety of San Diego citizens.

BACKGROUND

General

Although the likelihood of a radiological emergency occurring in NNPP facilities or vessels is extremely remote, prudence dictates that provisions be made to deal with such an occurrence. At any given time there may be one or more nuclear powered aircraft carriers or submarines in-port in San Diego.

It is the policy of the NNPP to ensure that state or local officials are notified of occurrences that might cause concern. Such occurrences will not necessarily be classified as unusual events, alerts or emergencies.

Naval Nuclear Propulsion Program Areas of Planning Attention

Emergency Planning Zones (EPZs) established by NUREG-0654/FEMA-REP-1 are not applicable to naval nuclear propulsion plants. Because of differences in the design and operation of naval nuclear propulsion plants when compared to commercial nuclear power plants, the exposure to the public would be localized and not severe in the highly unlikely event of a release of radioactivity from a vessel. To assist State and local authorities in assessing the need for any preplanning in the vicinity of naval facilities where nuclear-powered vessels are berthed, the NNPP has designated Areas of Planning Attention (APAs). The APAs extend 0.5-mile around every location where nuclear powered vessels are normally berthed (i.e., from the actual dock or pier—not the Federal Property Boundary). The 0.5-mile distance is based on detailed, conservative analysis of worst-case and highly unlikely, but credible scenarios—the actual radius of the impacted downwind area will most likely be smaller.

For Naval Base Point Loma and Naval Air Station North Island, the APAs do not extend onto public land areas outside the Federal Property Boundary. (See maps attached as Figures 1 through 3 of this Appendix) State and local government officials are responsible for making Protective Action Decisions and implementing appropriate protective measures to protect persons within their jurisdictions, but outside of the affected facility Federal Property Boundary.

Classification/Emergency Action Levels

The NNPP uses the four classes of Emergency Action Levels (EALs) specified in NUREG-0654/FEMA-REP-1. While the NNPP uses the same four classes as commercial nuclear power plants, the NNPP's methodology for establishing the EALs is different. The Nuclear Regulatory Commission (NRC) and Federal Emergency Management Agency (FEMA) guidance for establishing EALs contained in NUREG-0654/FEMA-REP-1 is primarily based on plant or site conditions (e.g., loss of offsite power, loss of one or more fission product barriers). Because of the differences in the design and operation of NNPP nuclear propulsion plants, the NRC/FEMA guidance is not applicable to NNPP nuclear propulsion plants.

The NNPP EALs are normally classified based on a conservative estimate of total radiation exposure to a hypothetical member of the public located near the Federal Property Boundary (or nearest downwind public location not on Federal Property) in terms of dose to the whole body (i.e., Total Effective Dose Equivalent (TEDE)) or dose to the thyroid (Committed Dose Equivalent (CDE)) during the plume phase. The NNPP used the Protective Action Guides (PAGs) specified by the Environmental Protection Agency (EPA), in EPA 400-R-92-001 of October 1991, to establish the General Emergency threshold doses (1 Rem TEDE, 5 Rem CDE thyroid). The dose thresholds for the lower tier event classes (Site Emergency, Alert, and Unusual Event) were then established using fractions of the EPA PAGs.

Event Classification*	Radiation Dose*	Radioiodine Dose*
Unusual Event	<0.01 Rem	<0.05 Rem
Alert	>0.01 to <0.1 Rem	>0.05 to <0.5 Rem
Site Emergency	>0.1 to <1.0 Rem	>0.5 to <5.0 Rem
General Emergency	>1.0 Rem	>5.0 Rem

*Normally based on exposure levels of a hypothetical person located at the Federal Property Boundary or the nearest downwind public location not on Federal Property.

The dose estimates are made using actual field survey data taken near the Federal Property Boundary and a two-hour release is assumed if the duration of the release is unknown. Since field survey data will not be immediately available, the NNPP will normally assign an event classification of "Alert" if an event involves actual or potential for reactor core damage and there is an actual or potential for a release of radioactivity to the environment. An event that involves the actual or potential degradation of the level of safety of the plant will be initially classified as an "Alert". Based on detailed, conservative analysis of worst-case and highly unlikely, but credible scenarios, NNPP events are not expected to exceed an "Alert" event category. No action by civil authorities or the public is required for these events.

An initial event classification of "Unusual Event" will be normally assigned if a reactor core is not involved (e.g., facility fire involving radioactive materials), and a release of radioactivity to the environment has occurred with potential for measurable dose to a hypothetical member of the public near the Federal Property Boundary. Classification levels do not apply to radiologically insignificant discharges, such as valve leakage or process piping joint leakage, involving a small volume of liquid into a large body of water. Other Navy reporting processes will report this type of discharge to the appropriate civil officials at the time of the event if warranted.

Class: UNUSUAL EVENT
Description: Unusual events are in progress, or have occurred, which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response are expected unless further degradation of safety systems occurs. If minor releases of radioactivity off-site do occur, releases are expected to result in whole body radiation exposures of <0.01 REM or thyroid exposures of <0.05 REM at the Federal Property Boundary (or nearest downwind public location not on Federal Property).

Class: ALERT
Description: Events are in progress, or have occurred, which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels near the Federal Property Boundary (or nearest downwind public location not on Federal Property). Radioactivity releases are expected to result in whole body radiation exposures of >0.01 to <0.10 REM or thyroid exposures of >0.05 to <0.50 REM at the Federal Property Boundary (or nearest downwind public location not on Federal Property).

Class: SITE EMERGENCY
Description: Events are in progress, or have occurred, which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA PAG exposure levels beyond the Federal Property Boundary. Releases are expected to result in whole body radiation exposures of >0.1 to <1.0 Rem or thyroid exposures of >0.5 to <5 Rem at the Federal Property Boundary.

Class: GENERAL EMERGENCY
Description: Events are in progress, or have occurred, which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be expected to exceed EPA PAG exposure levels near the Federal Property Boundary. Releases are expected to result in whole body radiation exposures >1.0 REM or thyroid exposures of >5.0 REM at the Federal Property Boundary.

Recovery, Relocation, and Re-entry
The Recovery, Relocation and Re-entry Phase will begin when the NNPP Emergency Control Center terminates the Alert, Site Emergency or General Emergency Phase or when events at the site have been downgraded and conditions stabilized. Off-site radiological monitoring, assessment, and environmental sampling will be continued until terminated by the State Radiation Safety Officer and State Dose Assessment Center (SDAC) officials or when missions have been completed. State and local government officials will continue to take actions deemed necessary to provide for the safety and economic well being of the population and to return impacted areas to normalcy.

CONCEPT OF OPERATIONS

Notification

Area Commanders of NNPP facilities use a two-tiered approach for accident notification. The Area Commander (Commander Submarine Force, U.S. Pacific Fleet Representative West Coast (COMSUBPACREP West Coast)) will immediately notify State and local officials via a Heads-Up phone call whenever any of the four levels of radiological emergencies occur. The Heads-Up phone call is executed within 10 minutes of manning the NNPP Area Commander Emergency Control Center via established notification procedures using the following precedence: the affected city, the non-affected city, the County of San Diego, and the State of California. During the Heads-Up notification call, the NNPP Area Commander will request the above agencies to dial into a conference circuit to provide updated information and coordinate response efforts. The NNPP Area Commander will then provide each agency a formal written notification within approximately 30 minutes after the Emergency Control Center is staffed using the NNPP Civil Authority Notification Form.

For more information on response to a Naval Nuclear Propulsion Program radiological emergency, refer to the State of California Naval Nuclear Propulsion Program Facilities and Vessels. Naval Nuclear Propulsion Program Facilities and Vessels is a supporting document to the California Radiological Emergency Preparedness (CalREP) Plan that provides information about NNPP facilities and vessels for ready reference to NNPP related radiological emergencies.

Specific Response Actions

This document and the Operational Area EOC Standard Operating Procedures (SOPs) for all-hazards emergency response including the San Diego Operational Area Hazardous Materials Incident Response Team Standard Operating Guidelines will guide the Operational Area's response to an event involving a NNPP facility or vessel. The standard notification procedure contained in the EOC SOPs will be instituted when activating this appendix.

Upon verification of an Unusual Event, the County OES Staff Duty Officer (SDO) will notify the Director, County OES and the other operations officers, as appropriate. County OES will coordinate with the cities of Coronado and San Diego, or others as necessary.

Upon verification of an Alert, the Operational Area EOC will be partially activated in accordance with the EOC SOPs. The following actions should be given priority.

Notify the City of San Diego Fire Communications Center. Request that Hazardous Incident Response Team (HIRT) Radiological Monitoring teams be mobilized. Specific response locations will be provided at the time of the notification since events may vary.

Notify the City of Oceanside and request the Radiological Monitoring (RadMon) Teams be placed on standby. If the situation warrants, the RadMon teams may be requested to stage at the Operational Area EOC to facilitate their use in a timely manner.

Notify the cities of Coronado (Police/Fire Communications) and San Diego, or others as necessary.

Notify the County Health Officer and the Department of Environmental Health and request the County Health Officer and Health Physicist report to the Operational Area EOC.

All other notifications will be made in accordance with the standard notification procedure contained in the SOPs.

Upon verification of a Site Emergency or General Emergency the Operational Area EOC will be fully activated in accordance with the SOPs.

Activation

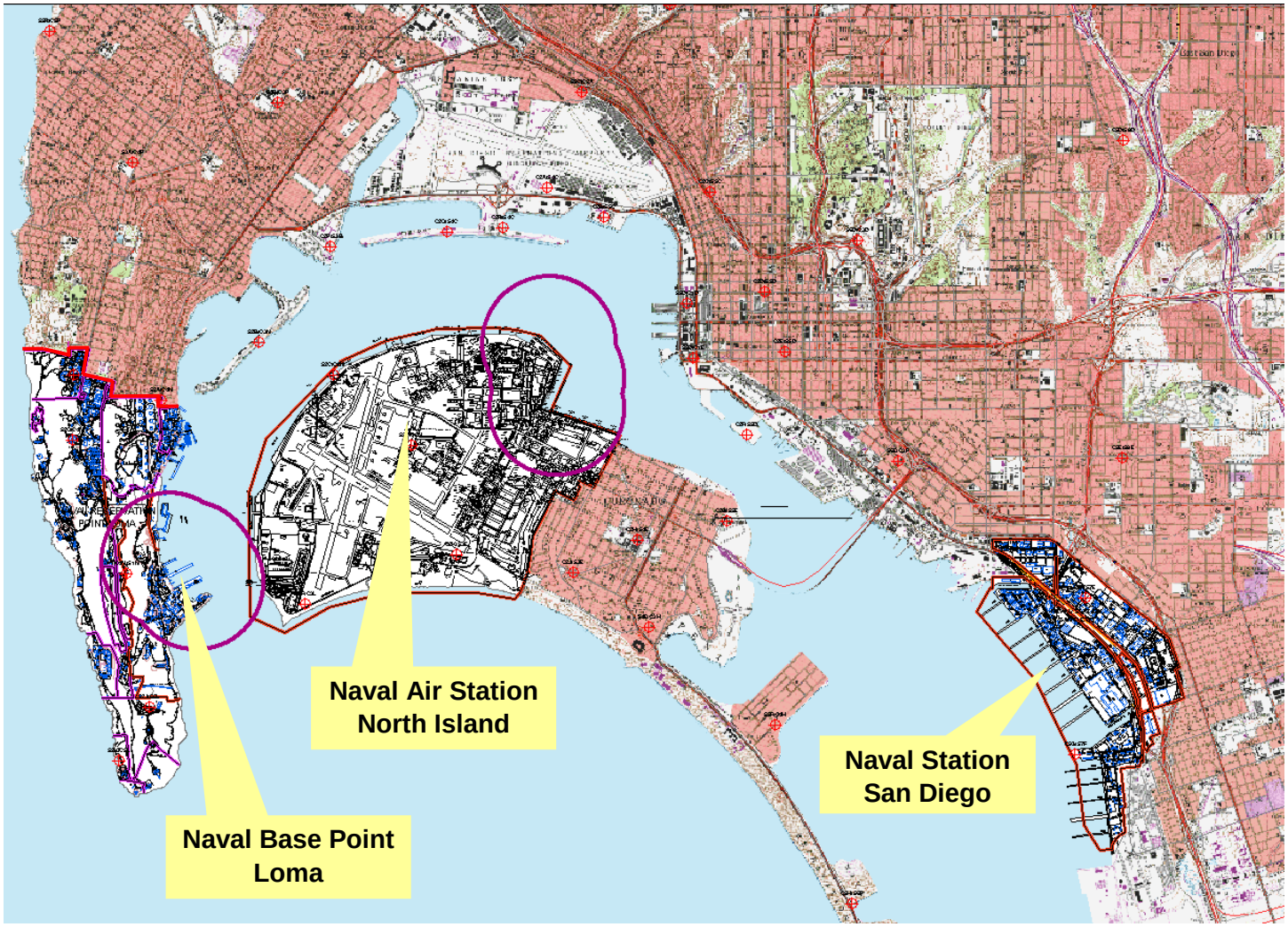
This appendix shall be activated by the Emergency Services Coordinator, his/her designated representative, or the County OES Director, whenever the County has verified an incident onboard a NNPP facility or vessel which has a classification of Alert or higher.

If the County OES SDO believes the situation requires it, he/she may begin notification prior to receiving authorization to activate the Operational Area EOC.

Deactivation

This appendix shall be deactivated when the NNPP Emergency Control Center terminates the Event Category or when events at the site have been downgraded and conditions stabilized. Off-site radiological monitoring, assessment, and environmental sampling will be continued until terminated by the State's Radiological Health Branch and SDAC officials or when missions have been completed. State and local government officials will continue to take actions deemed necessary to provide for the safety and economic well being of the population and to return impacted areas to normalcy.

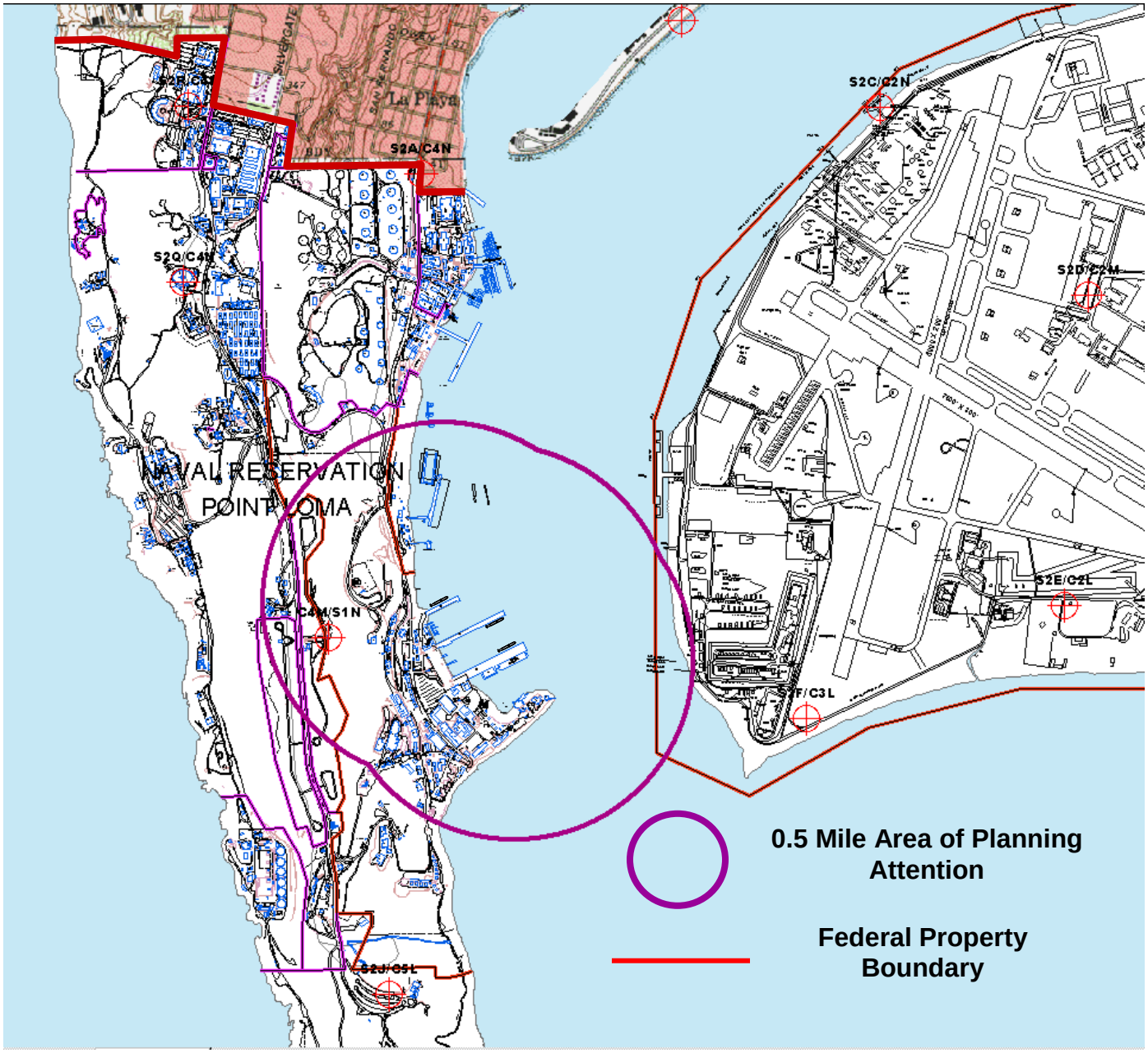
Annex H, Appendix II-3 - Figure 1
Naval Nuclear Propulsion Program
San Diego Areas of Planning Attention



0.5 Mile Area of Planning Attention

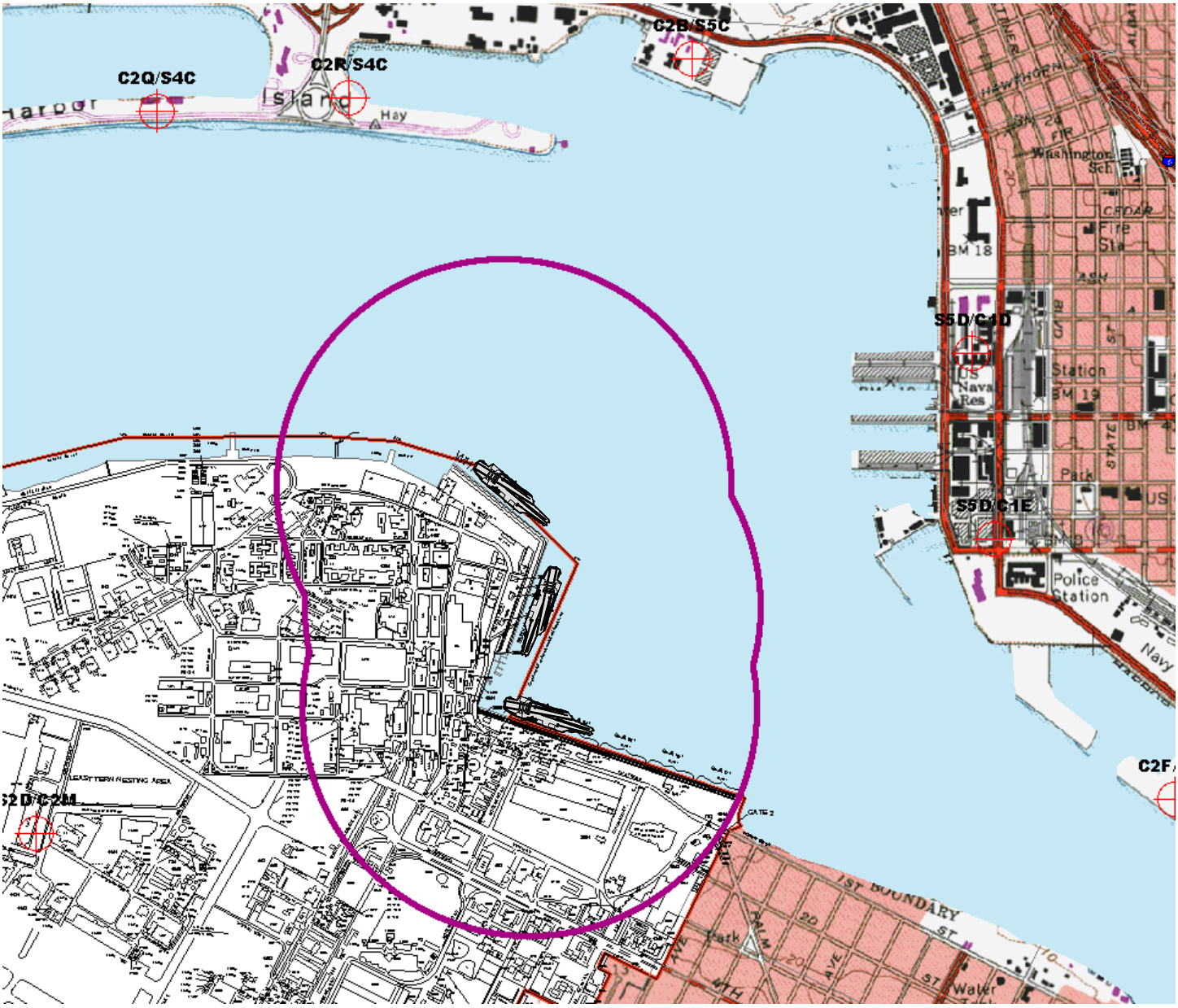
Federal Property Boundary

Annex H, Appendix II-3 - Figure 2
Naval Nuclear Propulsion Program
Naval Base Point Loma, CA
Area of Planning Attention



Limiting Distance to Federal Property Boundary
North Pier – 1.12 miles

Annex H, Appendix II-3 - Figure 3
Naval Nuclear Propulsion Program
Naval Air Station North Island, CA
Area of Planning Attention



0.5 Mile Area of Planning Attention

Federal Property Boundary

Limiting Distance to Federal Property Boundary
LM Berth – 0.5 Miles

APPENDIX II-4

RADIOLOGICAL PROTECTION
EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE MAJOR EARTHQUAKE

Action	**Responsibility**
If little/no damage reported, prepare to support and assist more heavily damaged jurisdictions.	Director, OES
If extensive damage reported, take the following actions:	
Verify reports.	OES SDO
Determine if any damage reports involve radiological material.	All Radiological Officers
Alert radiological monitoring personnel of any reported radiological incidents.	All Radiological Officers
Dispatch monitor team(s) to survey and report damage.	All Radiological Officers
Provide protective actions as required for each incident.	All Radiological Officers
Ensure radiological exposure records properly maintained for RadMon personnel.	All Radiological Officers
Keep responders informed of areas threatened by radiological hazards.	All Radiological Officers
Determine current and forecasted wind conditions and predict the winds affect on dispersion of radioactive particles.	All Radiological Officers
Ensure priority given to life-saving actions.	Incident Commander
Establish safe access controls to damaged/contaminated areas and assist people to safe areas.	Incident Commander
Recommend evacuation, if necessary.	All Radiological Officers
Obtain transportation, supplies and equipment needed for response teams.	All Radiological Officers
Provide radiation monitors for areas without qualified personnel.	All Radiological Officers

APPENDIX II-5

RADIOLOGICAL PROTECTION
EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE
HAZARDOUS MATERIALS INCIDENT

Action	Responsibility
Ensure that operations are conducted from an upwind position.	Incident Commander
Determine the magnitude of the incident and establish perimeter to prevent spread of contamination.	Incident Commander
Identify spilled or leaked substance. This would include locating shipping papers and placards.	Incident Commander
Take steps necessary to protect or save human life.	Incident Commander
Establish perimeter controls to keep the public a safe distance from the scene.	Incident Commander
Assure all responders within Exclusion Zone are wearing appropriate Respiratory Protection if airborne particulate release	Incident Commander
Reevaluate perimeters as the radioactive element is identified and/or environmental conditions change.	All Radiological Officers
Assist medical personnel in identifying, isolating and removing contaminated or injured persons from the scene.	RadMon Team
Take action to contain and/or prevent the spread of the material.	Incident Commander
Ensure OES has been notified.	Incident Commander
Recommend evacuation, if necessary.	All Radiological Officers
Maintain radiological exposure records on all personnel.	All Radiological Officers
Coordinate clean-up activities of private radioactive materials companies with RHB.	All Radiological Officers
Advise Public Information Officer and JIC of specific radiological information that should be given to the public.	Incident Commander/Radiological Officers

APPENDIX II-6

RADIOLOGICAL PROTECTION
EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE
IMMINENT/ACTUAL FLOODING

Flooding Expected

Action	Responsibility
Establish liaison with EOC and provide technical support.	All Radiological Officers
Prepare to relocate radiological equipment from flood plain.	All Radiological Officers
Provide monitoring support for flood fighting activities.	All Radiological Officers
Contact Radiological Health Branch to ascertain if any licensed facility has problems requiring attention.	Op Area Radiological Officers
Stand by to provide support as the situation develops.	All Radiological Officers
Provide advice to licensees on how to protect their facilities.	All Radiological Officers

Flooding Occurs

Provide monitoring support for rescue operations if required.	All Radiological Officers
Provide support on damage assessment teams.	All Radiological Officers
Report situation and support requirements to REOC Southern Region via Operational Area EOC.	All Radiological Officers

APPENDIX II-7

RADIOLOGICAL PROTECTION
EMERGENCY ACTION CHECKLIST FOR RADIOLOGICAL RESPONSE
IMMINENT/ACTUAL DAM FAILURE

Dam Failure Imminent

Action	Responsibility
Prepare to relocate any radiological equipment in inundation areas.	All Radiological Officers
Provide monitoring support, if needed, to workers in inundation areas.	All Radiological Officers
Establish liaison with, and provide technical support to, the EOC.	All Radiological Officers
Provide advice to licensees on how to protect their facilities and secure their material.	All Radiological Officers
Stand by to provide support as the situation develops.	All Radiological Officers

Dam Failure Occurs

Stand by to provide support:	All Radiological Officers
Monitoring for rescue operations	All Radiological Officers
Support for damage assessment teams	All Radiological Officers
Report on situation and requirements to REOC Southern Region via Operational Area EOC.	All Radiological Officers

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX I

Communications And Warning Systems

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX I

Communications And Warning Systems

ACKNOWLEDGEMENTS

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ANNEX I
COMMUNICATIONS AND WARNING SYSTEMS

I. General

Essential to all organizations is an effective communications capability to support their daily operations. In a disaster, these communications systems become critical. The magnitude of a particular emergency situation will determine the degree to which communications systems are utilized.

The San Diego County Operational Area has 19 jurisdictions, numerous Special Districts and many military facilities which support a number of communications systems. In addition to wired and cellular telephones, the Operational Area has developed robust interagency and interoperable wireless voice and data communications capabilities.

Most of the jurisdictions in the San Diego County Operational Area operate in the 800 MHz spectrum. The majority of these agencies operate on the San Diego County – Imperial County Regional Communications System (RCS), a voice network which provides a coordinated communications capability for the San Diego County Operational Area.

Many Fire and support agencies also operate on 150 MHz (VHF High Band) spectrum to facilitate voice Fire communications under the California Master Mutual Aid Agreement.

In addition to an effective communications capability, government must have an effective means to provide warning alerts to the population impacted or at risk as the result of an emergency. There are two Operational Area alert and warning systems designed to provide our citizens with emergency warning information. These systems are the Emergency Alert System (EAS) and the AlertSanDiego system.

II. Purpose

The purpose of this Annex is to address the communications systems and the Alert and Warning systems that are currently in place in the San Diego County Operational Area. This Annex will be updated as new systems are developed.

III. Types Of Communications Systems

The County of San Diego and most of the jurisdictions within the County have joined the San Diego County – Imperial County Regional Communications System (RCS). This network provides voice communications coverage over the entire San Diego County Operational Area utilizing trunked 800 MHz frequencies, and provides individual agency and system-wide common talk groups to all participating agencies. The RCS network also provides access to conventional mutual aid / interoperability frequencies that can be used to communicate with non-member agencies when there is a need to coordinate information and / or operations.

The City of San Diego operates a separate 800 MHz public safety trunked radio network serving the City's Fire and Rescue, Law Enforcement, and Emergency Medical Services voice communications operations. In addition, the City network supports the safety voice communications needs of the San Diego Unified School District and the San Diego Community College District.

Military facilities within San Diego County are served by UHF trunked networks. Non-military Federal agency and many State agency voice operations are typically in the VHF (30 – 300 MHz) and UHF (300 – 500 MHz) spectrum using conventional communications networks. Some Tribal safety communications are conducted on the RCS, while others operate in the VHF and UHF bands.

The San Diego Operational Area has developed a data communications capability (the Regional Command and Control Communications [3Cs] Network) to remove much of the operational coordination communications load from the field voice communications networks.

The Operational Area has established varying levels of interoperability among the voice communication networks within the County. The San Diego Urban Area Tactical Interoperable Communications (TIC) Plan has been developed and is maintained by the Interoperable Communications Committee. The TIC Plan documents the interoperable communications resources available within the San Diego County Operational Area, including which agency controls each resource, and what rules of use or operational procedures exist for the activation and deactivation of each resource.

IV. Functional Element Communications

The communications systems available to the various functional elements within the Operational Area are as follows.

Operational Area Direction and Control Communications

Emergency Management Direction and Control communications between the Operational Area Emergency Operations Center (EOC), County departmental and jurisdictional EOCs, and Incident Command Posts within the San Diego Operational Area are conducted using a mix of systems and technologies, including:

Regional Command and Control Communications Network

The Regional Command and Control Communications (3Cs) Network is a dedicated high speed private data microwave and fiber communications network interconnecting EOCs, Public Safety Answering Points and other key decision making facilities in the San Diego Operational Area. The 3Cs Network is equipped to support video teleconferencing, transmission of video signals from the region's airborne public safety operations platforms, digital telephone services, Geographic Information Systems data, and WebEOC data, among other applications. 3Cs Network endpoints and services are listed in **Attachment I-A**.

Regional Communications System (RCS)

The San Diego County – Imperial County Regional Communications System provides four dedicated talk groups under the control of the Operational Area EOC for use as needed for Direction and Control communications.

Radio Amateur Civil Emergency Services (RACES)

The Radio Amateur Civil Emergency Services (RACES) provides redundant voice and low-speed data communications circuits to EOCs and other key decision making facilities as needed.

Fire and Rescue Communications

The majority of the fire agencies in the San Diego County Operational Area use the RCS and the City of San Diego's 800 MHz systems for day-to-day fire and EMS response operations. A unified 800 MHz fire communications fleet map has been developed and programmed into every Fire and Rescue user radio on the RCS and the City networks. This unified fleet map provides command, tactical and support channel resources for incident operations, while allowing apparatus to move within the county and operate with any other 800 MHz-based agency as needed.

A large area of rural San Diego County is undeveloped wild land for which fire protection is the responsibility of the State or Federal fire protection agencies. These agencies primarily operate in the VHF Hi-Band spectrum, but they also have 800 MHz capabilities in dispatch and their field units.

The State Fire and Rescue Mutual Aid system primarily operates mutual aid incidents on the VHF-Hi-Band spectrum. The majority of local agency resources that would participate in wild land or mutual aid operations are equipped with VHF Hi-Band voice radios.

Unified fleet map, Fire and Rescue agency Mutual Aid Zone and agency Dispatch center assignments and contact information are listed in the San Diego Urban Area Tactical Interoperable Communications (TIC) Plan**, Attachment I-B.**

In an incident where mutual aid has been requested, the responsible Dispatch center will inform responding resources what the command frequency will be - either 800 MHz or VHF. Command vehicles have 800 MHz (trunked and conventional) and VHF capabilities. Talk groups within the unified fleet map have been established on 800MHz for the purpose of on-scene and enroute coordination, and are grouped by dispatch center / response area of the County. Assignments will be given to the incoming command units on a compatible frequency with the Incident Commander, and then passed to the other members of the strike team on their identified frequency or talk group.

Due to the complex nature of communications and the varied systems and networks in place, it is imperative that a qualified Communications Unit Leader (COML) be assigned to the incident and/or to the Operational Area Coordinator's office. The persons filling this position must have knowledge and an understanding of all radio systems used by the Fire Service within the County, including but not limited to the RCS, CalEMA and CDF networks, USFS, BLM and BIA communications resources.

When the Operational Area Emergency Operations Center has been activated, each incident-based COML needs to communicate on a regular basis with the Communications Unit Coordinator in the

OA EOC to ensure that incident operations are not in conflict with other incidents using frequency resources within the County.

Law Enforcement Communications

The majority of the Law Enforcement agencies in the San Diego County Operational Area use the RCS and/or the City of San Diego's 800 MHz systems for day-to-day response operations. The California Highway Patrol primarily uses VHF Low Band, but the El Cajon Area Office of the CHP uses the RCS as their primary system and the low band frequencies as backup. Other State and Federal law enforcement operations take place on VHF Hi-Band and UHF frequencies.

While different types of radios and frequencies are used, the Operational Area has established varying levels of interoperability among the voice communication networks within the County. Mutual Aid fleet map, Law Enforcement agency Mutual Aid Zone and agency Dispatch center assignments and contact information are listed in the San Diego Urban Area Tactical Interoperable Communications (TIC) Plan, **Attachment I-B.**

Emergency Medical Services (EMS) Communications System

The San Diego County Operational Area does not have established communications capabilities for the National UHF EMS radio frequencies in the 462 MHz band.

The Operational Area EMS Radio System is a component of both the RCS and the City of San Diego's 800 MHz networks. All ambulances and hospitals are using 800 MHz radios for communications. The Base hospitals are contacted by incoming EMTs and Paramedics directly.

There are currently seven Base Hospitals in the County. These Base Hospitals are:

1. Tri-City Medical Center
2. Sharp Grossmont Hospital
3. Scripps Mercy Hospital and Medical Center
4. Palomar Medical Center
5. Scripps Memorial Hospital - La Jolla
6. Sharp Memorial Hospital
7. U.C.S.D. Medical Center

In the event of a disaster, the facilitating Base Hospital for the affected area is responsible for gathering patient bed availability information from the satellite receiving hospitals.

County Government Communications System

Various agencies of County Government utilize voice radio communications in the furtherance of their duties. These agencies operate on the RCS and have been assigned their own talk groups. Countywide and mutual aid talk groups provide the ability for these agencies to talk to each other and with other RCS using agencies. When required, these agencies coordinate via the Sheriff's Communications Center (Station M). Some of the County agencies which are on this system include:

A. Medical Examiner
B. Parks and Recreation
C. Environmental Health
D. Public Works
E. Probation
F. Animal Control
G. Humane Society
H. Office of Emergency Services

Amateur Radio

There are volunteer Amateur Radio Operators in San Diego County who devote many hours to supporting and improving the communications capabilities of all of our emergency services. RACES and ARES operate across jurisdictional borders in San Diego County. There are also local jurisdiction radio groups that support communication efforts during disasters.

Radio Amateur Civil Emergency Services (RACES)

RACES is supported by the County Office of Emergency Services and the Sheriff's Department Wireless Services Division. These volunteers have registered with the County as Disaster Service Workers, and have trained to provide communications and other services to Emergency Management, Fire and Rescue, Law Enforcement and other Public Safety agencies as requested when other normal communications systems need to be augmented or replaced. They also have established radio stations in each city to provide communications between that city and the Operational Area EOC.

RACES volunteers have the ability to obtain a great deal of information for local government even when other communications systems are unavailable. Their ability to communicate over a long distance is vital in the absence of primary communications links.

Operational Area RACES network operations and procedures are covered in the Unified San Diego County Radio Amateur Civil Emergency Services Plan, **Attachment I-C.**

The services of RACES can be requested through the Sheriff's Communications Center or the Office of Emergency Services.

Amateur Radio Emergency Service (ARES)

ARES is an organization under the auspices of the American Radio Relay League (ARRL), the national association of Amateur Radio Operators. ARES members volunteer their services primarily to agencies involved in health and welfare activities. ARES works closely with the County's EMS agency, the American Red Cross, and the Salvation Army, and provides emergency communications to all of the area hospitals.

ARES can be requested through the Sheriff's Communications Center or the County EMS.

V. Operational Area Alert And Warning

Emergency information, advice, and action instructions are given to the public by various media. The Emergency Alert System (EAS), AlertSanDiego and mobile loudspeakers are the primary media. Other available media are bulletins, handbills, and the press. The Office of Emergency Services maintains pre-scripted, hazard-specific warning messages for high impact events which require time sensitive warnings.

Emergency Alert System (EAS)

General

The State of California has been divided into "EAS Operational Areas" for the purpose of disseminating emergency information. The San Diego EAS Operational Area encompasses the entire County. Under Federal guidelines, local EAS operational plans are written by the broadcast community. Two radio stations, KOGO (600 AM) the LP-1 and KLSD (1360 AM) the LP-2 have emergency generators and have volunteered to be the local primary stations for the San Diego County Operational Area. Other radio and television stations continue to operate as conditions permit.

All radio and television stations in San Diego County along with all cable TV providers will be broadcasting emergency public information in the event of an activation of the EAS. The system is designed so that all of the radio, TV and cable stations/systems monitor the LP-1 and LP-2 stations and forward the information to their listeners and viewers.

The San Diego EAS Operational Area Plan is **Attachment I-D.**

Users

Most of the EAS broadcasts will originate at the National Weather Service facility in Rancho Bernardo. The Office of Emergency Services is also authorized to activate the EAS. Any jurisdiction in the San Diego County Operational Area can contact the Office of Emergency Services to activate the system in the event of the need to notify its citizen of the need to evacuate or to provide them with emergency information.

AlertSanDiego

In 2006, the County of San Diego implemented the AlertSanDiego (ASD) communications system. ASD is currently available throughout the San Diego Region. ASD enables emergency dispatchers to call residents, via a reverse 911 callout system, and alert them to emergency actions which may need to be taken. ASD combines GIS mapping technologies with 9-1-1 calling data in an easy-to-use interface. The system, which is hosted by Twenty First Century Communications Inc., has the capability of making thousands of calls per hour by using automated calling technology. The Office of Emergency Services, incorporated cities, or Sheriff's Communications Center are responsible for the activation of ASD.

AlertSanDiego has limitations which include:

1. Phone lines and power must be working for residents to receive call and/or messages. If residents have registered their cell phone through AlertSanDiego, then it is still possible for them to receive messages.
2. Cell phone or private branch exchange (PBX- most businesses have their phones hooked up to a PBX) numbers are not in the database and those residents will not receive the call, unless they have registered their cell phones through AlertSanDiego.
3. If residents are still on a dial-up internet connection or subscribe to call blocking services, they will not receive the call, unless they are registered through AlertSanDiego.

VI. Federal And State Alert And Warning

This warning system is the means for relaying to the public, notice from the Federal, State or local government of impending or actual disaster or attack. Appropriate responses and the most effective use of warning information may be limited by the amount of time available.

Actions

Warning actions are characterized by requiring high priority for a short period of time, the use of mass media systems for passing warning to the public, the small number of workers necessary to operate the system, the demand for fast activation of the system on short notice, and the need to maintain readiness to repeat all actions in the event of successive alerts or attacks.

The California Warning System (CALWAS), a component of the National Warning System (NAWAS) sends out warning information, which is received at the Sheriff's Communication Center and relayed to the Office of Emergency Services. The public is then warned by means of the Emergency Alert System (EAS) and any other means, including mobile loudspeakers.

Alternate means of warning are via the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, and the Radio Amateur Civil Emergency Services (RACES) network.

Notice of warning is also broadcast from the various county and city communications centers to special facilities (schools, hospitals, fire stations, utility stations, etc.). Key workers of emergency organizations may be alerted by telephone or radio. The EAS and the AlertSanDiego systems are expected to provide coverage for a large part of the population.

Types Warning

Attack Warning
A warning that an actual attack against this country has been detected.

Fallout Warning
A warning of radiation hazards resulting from a nuclear cause.

Warning Information

Authorized EAS stations will broadcast warning information as requested under the EAS Operational Area Agreement.

The California Emergency Management Agency (Cal EMA) operates the Emergency Digital Information Service. The EDIS delivers official local and state-wide information about emergencies and disasters to government agencies, the public and news media in California.

War Emergency
Emergency Services authorities will route war emergency warnings via designated EAS program entry points to the media.

Peacetime Emergencies
Warning of an extraordinary peacetime emergency may be received by local government over the California Law Enforcement Telecommunications System (CLETS), public safety radio systems, NAWAS, and/or other means.

VII. Other Communications Capabilities

OASIS
OASIS is an acronym for Operational Area Satellite Information System. It is a State of California owned satellite system which has been set up at the Operational Area EOC. OASIS provides the EOC with several phone lines for voice and data.

Cellular Telephones

Most, if not all agencies have cellular phone capabilities. All agencies should have cellular phone numbers for all of their staff who have cellular phones, and the cellular phone numbers for their closest jurisdiction.

VIII. EOC Communications Systems

The communications systems installed in or controlled from the Operational Area Emergency Operations Center (EOC) support the field activities of the emergency organization. Other communications systems provide links to nearby jurisdictions and to higher levels of the statewide emergency organization. The communications systems in the EOC include the radio systems licensed to the County. Such radio systems are augmented, in an emergency, by radio systems licensed to other governmental agencies, to private industry, and to individuals. During a State of War emergency, privately owned radio systems, equipment, and facilities, subject to approval of the licensee, will generally be used to support field activities of the emergency services not already linked directly to the EOC.

The Communications Unit is a technical support position in the Logistics Section which provides communications for the management of emergency operations. Messages sent outside the EOC are handled by operators assigned to the communications section. The County communications operation is under command of the Sheriff.

The Sheriff's Wireless Services Division provides staff to make provisions for additional equipment in addition to maintaining communications equipment. The operations personnel assess their communications requirements and advise the Communications Unit Leader. Procurement of communications resources and services will be managed by the County Technology Office, in consultation with and on advice from the resources group.

A listing of the communications networks available in the Operational Area EOC is found in **Attachment I-E.**

IX. Mobile Communications And Command Vehicles

In the event the Operational Area EOC or a jurisdictional EOC must be relocated, the County has two mobile communications and command vehicles ("ECHO III" and "RACES 1") available to support EOC communications operations. These vehicles are maintained by the Sheriff's Department Wireless Services Division and are operated by volunteers the County's RACES Unit. These vehicles are also available to support incident operations as necessary.

To support incident-based management and operations, there is an extensive inventory of Mobile Command Vehicles owned by the various jurisdictions in the San Diego Operational Area. These vehicles are listed in the TIC Plan, **Attachment I-B.**

ATTACHMENTS:

I-A: Regional Command and Control Communications (3Cs) network

(*Under Initial Development)*

I-B: San Diego Urban Area Tactical Interoperable Communications Plan

(2006 Edition under revision by the ICC)

I-C: Unified San Diego County Operational Area Radio Amateur Civil Emergency Services Plan

(2001 Edition under revision by RACES Staff)

I-D: San Diego EAS Operational Area Plan

(Insert current edition of EAS Plan)

I-E: San Diego Operational Area EOC Communications Systems Overview

(Wireless Services is updating list in 2006 Annex I)

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX J

Construction And Engineering Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX J

Construction And Engineering Operations

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Joe Urban, Emergency Preparedness Coordinator, Oceanside Fire Department
Chief Dave Hanneman, Chula Vista Fire Department
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San Diego County Office of Emergency Services

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ANNEX J
CONSTRUCTION AND ENGINEERING OPERATIONS

I. General

Introduction

This Annex is created and intended to be an integral part of the San Diego County Operational Area Emergency Plan. In addition, it identifies the implementation procedures for mutual aid and other support.

Construction and Engineering Operations is structured to provide public works and engineering-related support for the changing requirements of domestic incident management to include preparedness, prevention, response, recovery, and mitigation actions. Activities within the scope of this function include conducting pre and post-incident assessment of public works and infrastructure; executing emergency contract support for life-saving and life-sustaining services; providing technical assistance to include engineering expertise, construction management, and contracting and real estate services; providing emergency repair of damaged infrastructure and critical facilities; and implementation of the Associated General Contractors Emergency Services Mobilization Program (AGCESMP) *to be developed.*

The construction and engineering operations section of Annex J describes the basic concepts in coordinating and organizing the capabilities and resources of local government to facilitate the delivery of services, technical assistance, engineering expertise, construction management, and other support to prevent, prepare for, respond to, and/or recover from an incident of extreme significance. While local agencies have individual construction and engineering responsibilities, Annex J serves as a unifying document in the event of a major disaster.

Intent

No single community or agency has the ability or resources sufficient to cope with any and all emergencies for which a potential exists. This plan is designed to meet the anticipated needs of local agencies and to access the resources of other agencies to meet the needs of emergency incidents. Agencies that are members of the Unified Emergency Services Organization have agreed to assist each other with resources, if they are available, provided their own recovery operations are not compromised. In addition, some special districts have signed Mutual Aid agreements with other districts throughout Southern California. The State of California Fire and Rescue Emergency Mutual Aid Plan has been signed by most, if not all, cities within the State.

Purpose

This Annex establishes the organizational responsibilities and prescribes actions and procedures required for the provision of restorative services and Mutual Aid during a disaster or extreme emergency within the San Diego County Operational Area.

1. Coordination and support of infrastructure risk and vulnerability assessments.
2. Provide the basis for the coordination of operations for Public Works Agencies and other

special districts within the San Diego Operational Area.

3. Provide assistance in the monitoring and stabilization of damaged structures and the demolition of structures designated as immediate hazards to public health and safety.
4. Coordinate and provide structural specialists expertise to support inspection of mass care facilities and urban search and rescue operations. This is in conjunction with Annex B.
5. Execution of emergency contracting support for life-saving and life-sustaining services, to include providing potable water, ice, emergency power, and other emergency commodities and services. This may be in conjunction with other Annex activations.
6. Managing, monitoring, and/or providing technical advice in the clearance, removal, and disposal of contaminated and uncontaminated debris from public property. This may include waste sampling, classification, packaging, transportation, treatment, demolition, and disposal of contaminated debris and soil. This shall be general debris/rubble and only performed to support clearing roads or public property.
7. Providing emergency repair of damaged infrastructure and critical public facilities. This may include but is not limited to:
    A. Transportation systems - roads, bridges, airports, railway and shipping systems.
    B. Environmental systems - waterways, habitats, coastal erosion and landslides.
    C. Domestic utilities - water, electrical, natural gas, and sewer systems.
    D. Structural systems - foundation, building components and contents.
8. Restoration of critical navigation, flood control, and other water infrastructure systems.

Planning Basis

1. No community has resources sufficient to cope with any and all emergencies for which potential exists.
2. Construction and Engineering coordinators must preplan emergency operations to ensure efficient utilization of available resources.
3. Basic to California's emergency planning is a statewide system of mutual aid in which each local jurisdiction relies first upon its own resources.
4. Agencies that are members of the Unified Emergency Services Organization have agreed to assist each other with resources if they are available.
5. The California Disaster and Civil Defense Master Mutual Aid Agreement between the State of California, each of its counties and those incorporated cities and special districts signatory thereto:
    A. Creates a formal structure for provision of mutual aid.
    B. Provides that no party shall be required to unreasonably deplete its own resources in furnishing mutual aid.

C. Provides that the responsible local official in whose jurisdiction(s) an incident occurs requiring mutual aid shall remain in charge at such incident including the direction of personnel and equipment provided through mutual aid plans pursuant to the agreement.

6. Per the Standardized Emergency Management System (SEMS), Mutual Aid requests from jurisdictions and Special Districts within the Operational Area must be sent to the Operational Area Emergency Operations Center (OA EOC). The Logistics Section at the OA EOC will coordinate requests for mutual aid and will keep track of who needs what and where assets have been sent. The Logistics Section coordinates and forwards the requests to other jurisdictions, or the State Office of Emergency Services.
7. When the Mutual Aid assets are ordered, the requester will provide a staging area where the resources will be sent, and a point of contact. It is the responsibility of the requesting jurisdiction to provide any additional logistical support, i.e., food, water, fuel and sleeping accommodations, for the additional resources.
8. The state is divided into six mutual aid regions to facilitate the coordination of mutual aid. San Diego County is located in Mutual Aid Region VI. Through this system, Cal EMA is informed of conditions in each geographic and organizational area of the state and is informed of the occurrence of an imminent threat of disaster.
9. In addition to Public Works resources, this plan includes both public and private agencies with support capability and/or emergency responsibility.
10. Certain types of resources may be considered outside the mutual aid agreement by the responding agency and therefore may be subject to a pre-established agreement, which may be available only on a reimbursement basis.
11. This plan, as part of the San Diego County Operational Area Plan, should be distributed to and discussed with management, command, operational, and support level personnel within each jurisdiction.
12. This plan must be continuously reviewed, revised when necessary, and tested to encompass change and refinement consistent with experience gained through disaster operations and training, and changes in resource availability.

Activation and Termination

Activation and termination of this Annex shall be by the direction of:

1. The County Chief Administrative Officer (CAO) as the Area Coordinator of the Unified San Diego County Emergency Services Organization.
2. A designated Deputy CAO.
3. The Director, Office of Emergency Services or a designated representative.
4. The Director, Department of Public Works.

Activation normally occurs based on: Notification by OES that the scope of an emergency will exceed local resources; a disaster which by its nature or severity automatically initiates activation of

the plan; and/or a public media announcement that a disaster has occurred and that all personnel are to report to their disaster assignments.

Deactivation is normally accomplished by a phase-down procedure and a return to normal, pre-disaster operations. Operations then revert to activities for reconstituting local government activities, as needed and as directed by the Unified Disaster Council in accordance with standing policies and unified agreements.

II. Organization And Responsibilities

Organization

Most cities in the San Diego County Operational Area have Public Works Departments. In the event of a major emergency or disaster, the Director(s) of Public Works in the affected jurisdiction(s) will coordinate the implementation of this Annex. In unincorporated areas of the county, this responsibility falls upon the County Public Works Director. In many instances because of size and complexity of the incident, some agencies/jurisdictions may not have the personnel to fill all the positions at the EOC as shown at the Operational Area level. This may require the assistance of all affected and non-affected agencies and Special Districts for additional resources.

Responsibilities of Local Agency

Activities include but are not limited to the following:

1. Reasonably exhaust local resources before calling for outside assistance.
2. Render the maximum practicable assistance to all emergency stricken communities, under provisions of the San Diego County Mutual Aid Plan.
3. Provide for receiving and disseminating information, data and directives.
4. Maintain a call-back list of primary response personnel.
5. Coordinate and conduct necessary training to adequately perform functions and responsibilities during emergencies.
6. Provide department personnel to staff the Local Emergency Operations Center (EOC).
7. Provide department personnel to staff the Local Joint Information Center (JIC).
8. Coordinate all interdepartmental contacts with other Deputy Directors.
9. Coordinate with OA EOC Director.
10. Develop and maintain current records of road and flood conditions throughout their jurisdiction.
11. Provide engineering and public service work. Tasks (where applicable):
    A. Restore, maintain and operate essential services within their jurisdiction:
        i. Roads and bridges and/or traffic control devices

ii. Storm drainage facilities

iii. Wastewater disposal plants, trunk sewers and laterals

iv. Airport facilities

v. Rural transportation facilities

B. Repair, modify and/or construct emergency facilities and housing:

i. Bridges

ii. Alternate road access

iii. Alternate airport landing strips

iv. Temporary solid waste collection areas

v. Temporary wastewater transmission lines

vi. Temporary housing

12. Provide engineering expertise and equipment to assist in search and rescue Operations. Additional personnel for engineering assistance will be drawn from other public and private sectors.
13. Maintain an inventory of heavy equipment and equipment operators. Additional equipment and personnel may be drawn from other public and private sectors.
14. Manage and coordinate contracted transportation vehicles and facilities.
15. Maintain an inventory of resources and provide for procurement and allocation of transportation resources.

Responsibilities of County Public Works Administrator

The County Deputy Director of Public Works/Transportation Division has the primary responsibility to respond for the department in the event of an emergency. During disaster conditions, the Deputy Director shall:

1. Reasonably exhaust county resources before calling for outside assistance.
2. Render the maximum practicable assistance to all emergency stricken communities, under provisions of the San Diego County Mutual Aid Plan.
3. Provide for receiving and disseminating information, data and directives.
4. Maintain a callback list of primary response personnel.
5. Coordinate and conduct necessary training to adequately perform functions and responsibilities during emergencies.
6. Provide department personnel to staff the Operational Area Emergency Operations Center (OA EOC).
7. Provide department personnel to staff the County Joint Information Center (JIC).
8. Coordinate all interdepartmental contacts with other Deputy Directors.

9. Coordinate with city EOCs.
10. Develop and maintain current records of road and flood conditions throughout their jurisdiction.
11. Provide engineering and public service work.

    Tasks (where applicable):

    A. Restore, maintain and operate essential services within their jurisdiction:
        i. Roads and bridges and/or traffic control devices
        ii. Storm drainage facilities
        iii. Wastewater disposal plants, trunk sewers and laterals
        iv. Airport facilities
        v. Rural transportation facilities

    B. Repair, modify and/or construct emergency facilities and housing:
        i. Bridges
        ii. Alternate road access
        iii. Alternate airport landing strips
        iv. Temporary solid waste collection areas
        v. Temporary wastewater transmission lines
        vi. Temporary housing
12. Provide engineering expertise and equipment to assist in search and rescue operations. Additional personnel for engineering assistance will be drawn from other public and private sectors.
13. Maintain an inventory of heavy equipment and equipment operators. Additional equipment and personnel may be drawn from other public and private sectors.
14. Manage and coordinate contracted transportation vehicles and facilities.
15. Maintain an inventory of resources and provide for procurement and allocation of transportation resources.

The County may initiate the Associated General Contractors Emergency Services Mobilization Program (AGCESMP *to be developed*), which, through the assistance of the construction industry, will maintain an inventory of resources and provide an option for procurement and allocation of heavy construction equipment and necessary equipment operators. The AGCESMP is a plan for rapid mobilization of construction manpower and equipment in the event of a disaster, at current rates.

California Department of Transportation (CalTrans)

Dispatch field crews accordingly to assist the California Highway Patrol, other emergency

responders, and the public with State highway closures, signage, and/or clearance activities in an effort to maintain and/or restore the State highway transportation network to safe and normal operating conditions.

The Caltrans Emergency Operations Center will be activated and staffed accordingly to provide centralized coordination, communication, command, and control of emergency operations and the management of resources. This would include monitoring and providing status of state highways within the region, communicating damage reports, and initiating emergency contracts where appropriate for repairs on the State highway system.

San Diego Gas and Electric (SDG&E)

Provide initial and updated SDG&E damage assessments to include: number of gas and electric outages, areas impacted and number of customers affected, overall estimated restoration time as well as estimated restoration times for each outage, workforce status including use of mutual assistance crews and any critical operational issues or conditions.

Initiate and coordinate SDG&E requests for assistance from the region via the Operational Area EOC.

San Diego County Water Authority

In an emergency in which the county's water supply or quality is affected, the Water Authority and its member agencies, DEH, CDPH, County Public Health Officer, and OES will act in concert to:

- Conduct damage assessments and provide situation status
- Restore water systems and supply
- Ensure the quality of the water
- Determine need for supplemental drinking water
- Provide public notifications on the safety of the water

For additional information on Water Operations, see Appendix W.

III. Policies And Procedural Guidelines

The following general procedures have been developed to provide guidance in the implementation of Annex J:

Emergency Work Station

All Public Works Agency personnel should have a designated emergency workstation. This will generally be the station they normally report to during regular work hours unless a different emergency workstation has been previously assigned.

Alternate Emergency Work Station

In the event that Public Works' normal or emergency work stations are inoperable as a result of the disaster, or staff cannot get to their normal or emergency work stations, the following is a guide used by County DPW for reporting to alternative stations:

Regular or Emergency Work Station	Alternate Work Station
Co. Operations Center-San Diego	Div. I Headquarters-Jamacha
Div. I Headquarters-Jamacha	Co. Operations Center, San Diego
Div. II HQ San Marcos	Ramona Road Maintenance Station
Maintenance Stations Countywide	Appropriate Division HQ
Wastewater Division-Kearny Mesa	Wastewater Operations/Spring Valley
Gillespie Field El Cajon	Ramona Airport
Palomar Airport Carlsbad	Ramona Airport
Ramona Airport	Gillespie Field, El Cajon

Reporting Procedures during Plan Activation

Unless assigned to an emergency station, personnel will report to their regular workstation. When assigned to an emergency workstation prior to the emergency, or if telephone communications are disrupted, personnel will report in person to their workstation.

Operational Area

The Operational Area covered under this Annex is the entire county and all cities. The County Department of Public Works' responsibilities are within the unincorporated areas of San Diego

County. When requested by proper authority, mutual aid services within incorporated cities and adjacent counties can be provided.

Departmental Operations Centers (DOC's)

All Public Works Agencies should designate alternate locations for their Departmental Operations Centers (DOCs) in the event that the primary location is inoperable. For example, the County Department of Public Works is headquartered at the County Operations Center in Kearney Mesa. In the event this facility was damaged to the extent that it could not serve as a DOC, the DOC would be located at Division I Headquarters in Spring Valley, as first choice, and then to Division II Headquarters in San Marcos, as second choice.

IV. Supporting Organizations And Responsibilities

Departments of General Services

1. Provide vehicles as needed.
2. Provide vehicle maintenance, repair and fueling services.
3. Provide architects, engineers, electricians and plumbers.
4. Provide communications support in the form of personnel and/or equipment.

Parks and Recreation Departments

1. Provide miscellaneous construction equipment and operators.

Land Use Departments

1. Provide structural engineers and building inspectors for damage assessment activities, as well as for recovery efforts.
2. Provide geologists for technical support.
3. Acquire water resources.

Construction Industry

1. Respond to requests for heavy equipment and labor in accordance with the AGCESMP *(to be developed).*
2. Provide structural engineers and building inspectors for damage assessment activities, as well as for recovery efforts.

Transportation Industry

1. Provide ground and rail transportation, including operators, for emergency transportation and evacuation.
2. Provide additional vehicular support.

A. Fire and Life Safety Department

1. Respond to requests for rescue and treatment following Annex B and the California State Mutual Aid Plan.
2. Provide emergency structural stabilization and hazard abatement for damage assessment activities, as well as for recovery efforts.

APPENDIX W

WATER OPERATIONS

INTRODUCTION

The Water Sector in San Diego County consists of public departments, public agencies, private companies, tribal governments, and other individual suppliers of water to the San Diego region's population. Water is imported into the county by the San Diego County Water Authority (Water Authority) providing approximately 90-percent of the county's water through wholesale transportation and distribution to its 24 member agencies. The 24 member agencies deliver water to approximately 97-percent of the county's population and are made up of six cities, one military reservation, one authority representing a city and an irrigation district, two irrigation districts, and 14 water districts. Approximately 174 small water systems serve 3-percent of the population, principally located in the unincorporated areas of San Diego County. The owners and operators of small and large water systems have a responsibility to consumers to provide a safe and reliable supply of water.

AUTHORITIES

The principal federal law that ensures safe drinking water for the public is the *Safe Drinking Water Act* (SDWA). The Environmental Protection Agency (EPA) sets the standards for drinking water quality and oversees all states to ensure that the standards are met. EPA delegated implementation of the SDWA to California. The California SDWA is contained in the *Health and Safety Code*, which also contains the statutory responsibilities and requirements defined for the California Department of Public Health, Drinking Water Program. The Drinking Water Program and any regulations developed must be equal to or more stringent than the federal program. The regulations are contained in *Title 22 California Code of Regulations*. The Drinking Water Program's District Engineer is the regional representative of the primacy agency for all water suppliers in the county. Through the Local Primacy Agreement issued to the County of San Diego, the Department of Environmental Health regulates small water systems with 199 or less service connections (California Safe Drinking Water Act, Article 1, Section 116330).

OBJECTIVES

The primary objective of the Water Sector in an emergency is to maintain or restore water systems function in order to deliver a safe and reliable water supply. Functional objectives of the Water Sector are:

A. Provide situational awareness to the Operational Area Emergency Operations Center (OA EOC).

B. Coordinate drinking water safety and environmental health issues with the appropriate regulatory agencies.

C. Facilitate the use of mutual aid agreements in restoring water systems.

ORGANIZATIONS AND RESPONSIBILITIES

In an emergency, the roles and responsibilities are as follows. A diagram of the Water Sector is shown in Attachment A.

A. California Department of Public Health, Drinking Water Program, San Diego District Office (CDPH)

CDPH is the primacy agency for all California water systems. CDPH staff act as disaster service workers in response to natural disasters and emergencies. The primary role for CDPH staff from the onset of an incident is to conduct water system damage assessments and determine the necessity of issuing water quality advisories. Water system assessments are performed by contacting water system personnel by phone, e-mail, or other available forms of communication and by obtaining water system status reported through the Water Authority. In addition, field survey teams can be dispatched to affected public water systems and integrate into the local emergency operations center established for the incident. In these instances, CDPH staff report as a CDPH representative and technical specialist. CDPH staff coordinates with the San Diego District Engineer, Regional Engineer, San Diego County Department of Environmental Health and water systems on water supply and water quality issues. CDPH staff work with public water systems during restoration operations to determine appropriate actions to be taken for the lifting of water quality advisories. **Only CDPH, or its delegate for small water systems (DEH), can lift a water quality advisory.**

B. San Diego County Department of Environmental Health (DEH)

CDPH has delegated authority to DEH as the primacy agency for small public water systems. Small water systems are defined as those having more than 5 and fewer than 200 connections. Small water systems supply water to approximately 3-percent of the population and typically use groundwater wells as a source of water. A map of the small public water systems is shown in Attachment B. DEH staff act as disaster service workers in response to natural disasters. The Land and Water Quality Division is responsible for monitoring the small water systems, responding to small water systems, and providing assistance in an emergency. The Land and Water Quality Division conducts water system damage assessments through field survey teams and coordinates assistance for its regulated water systems through the department's Operational Center and County Emergency Operations Center. See Annex H Environmental Health Operations for more information.

C. San Diego County Water Authority

The Water Authority, a wholesale water agency, purchases both treated and untreated water from Metropolitan Water District of Southern California and delivers the water to 24 member agencies through a system of pipelines and facilities. Each member agency then delivers water directly to consumers through its own retail distribution system. A map of the 24 member agencies is shown in Attachment D. More information about the Water Authority and its member agencies is available at www.sdcwa.org and on the individual member agency websites.

In an emergency, the primary responsibility of the Water Authority and the member agencies is water system restoration in order to deliver a safe and reliable water supply. The Water Authority sends a representative to the OA EOC to assume the Water Unit Liaison position under the Construction and Engineering Branch. The Water Unit Liaison provides situational awareness and coordination for the Water Sector and the OA EOC.

D. San Diego County Health and Human Services Agency (HHSA), Public Health Services (PHS)

Specific roles and responsibilities of Public Health Services include:

A. Public Health Officer: In accordance with state water quality regulations will assist in enforcing water restrictions; may impose a higher level of restriction than regulations require if deemed to be protective of the public health

B. Public Health Laboratory: Bacteriological testing of drinking water for potability, environmental testing, especially food, water and sewage.

See Annex E Public Health Operations for more information.

CONCEPT OF OPERATIONS

In an emergency in which the county's water supply or quality is affected, the Water Authority and its member agencies, DEH, CDPH, County Public Health Officer, and OES will act in concert to:

- Conduct damage assessments and provide situation status
- Restore water systems and supply
- Ensure the quality of the water
- Determine need for supplemental drinking water
- Provide public notifications on the safety of the water

WATER SUPPLY

Up to 90-percent of the region's water is imported from the Colorado River and Northern California by a single supplier, the Metropolitan Water District of Southern California (Metropolitan). The water is delivered by the Water Authority through two aqueducts containing five large-diameter pipelines. The pipelines have a maximum capacity to carry 925 million gallons a day and bring both treated and untreated water into San Diego County. The remaining 10-percent comes from local water sources including groundwater, local surface water, recycled water, seawater desalination and conservation. Water is stored in reservoirs located throughout the county. When the raising of San Vicente Dam by 117-feet is completed, there will be over 700,000 acre feet of surface water storage in 25 reservoirs owned by 12 agencies.

As of April 2010, 174 small water systems serve a population of approximately 26,000 in rural north and east areas of the county. These water systems service residences, schools, workplaces, businesses, restaurants, recreational vehicle parks, and county parks.

Available supply in an emergency is dependent upon many factors. Most small water systems have a single source of supply and minimal water storage capacity that may last one to two days. Water Authority member agencies have the ability to remain off the aqueduct for a ten-day period through storage, conservation, and other means. The Water Authority's Emergency Storage Project (ESP) is system of reservoirs, interconnected pipelines, and pumping stations. ESP is planned to supply enough water for two-months, if there is no water from Metropolitan, and up to six months, if there is some water available from Metropolitan. Metropolitan plans for a six-month emergency water

storage supply. As water systems are being restored, strategies for supplying water to the population may include establishing temporary connections, rerouting water, conservation, and distribution of bottled water.

1. Treated and Untreated Water

The Water Authority purchases treated and untreated water from Metropolitan for delivery to its member agencies. The untreated water is either processed by the Water Authority at its Twin Oaks Valley Water Treatment Plant or sold to agencies with their own reservoirs and treatment facilities. All treated water served in San Diego County meets or exceeds rigorous state and federal water quality regulations. Water Authority member agencies that own and operate water treatment plants within the county are:

City of Escondido – joint ownership with Vista Irrigation District
Helix Water District
City of Oceanside
Olivenhain Municipal Water District
Pendleton Military Reservation
City of Poway
Ramona Municipal Water District
City of San Diego
Santa Fe Irrigation District – joint ownership with San Dieguito Water District
Sweetwater Authority (operating for South Bay Irrigation District and National City)
Yuima Municipal Water District

2. Public Notifications

Public water systems, CDPH Drinking Water Division, DEH, and the County's Public Health Officer can independently or jointly issue water quality advisories. However, it is the public water system's and the small water system's responsibility to make public notifications to their consumers in accordance with their emergency response and/or emergency notification plan. Notices are delivered door to door, signposted, announced by the media, and through public notification systems such as AlertSanDiego.

Following public notification of a water quality advisory, a series of laboratory tests and evaluation will be conducted. Lifting the water quality advisory is the sole responsibility of the CDPH, Drinking Water Division or its delegate for small public water systems (DEH). Once the water quality advisory is lifted, then the public water system makes the public notification in a similar manner to the original public notification.

3. Drinking Water Distribution

In the event of an insufficient water supply due to a water quality advisory or outage, a drinking water distribution plan coordinated by the OA EOC will be implemented. Water agencies will provide information about the affected service area to the OA EOC. Close coordination between the San Diego County Public Health Officer, the CDPH, Drinking Water Program, District Engineer, DEH, and the OA EOC are crucial to the safety and health of the public when distributing drinking water. Guidance for distribution of emergency drinking water is located in the California Emergency Management Agency publication *Multi-Agency Response Guidance for Emergency Drinking Water Procurement & Distribution.*

B. WATER SECTOR MUTUAL AID AGREEMENTS

In non-emergency times, water suppliers operate as independent entities. During emergencies, each entity continues to operate independently until it determines that outside resources are necessary. Depending upon the extent of the incident, the entity may request mutual aid through established mutual aid agreements or through the OA EOC. Requests and coordination of resources will first be made at the local level, and when necessary, requests will be forwarded to the Regional Emergency Operations Center (REOC) located in Los Alamitos and then to the State Operations Center's (SOC) Business and Utility Operations Center (BUOC).

The Water Sector maintains several mutual aid/assistance agreements that can be activated in an emergency when water related resources are exhausted or nearing exhaustion. These agreements are generally used to obtain materials, equipment, and personnel required for system restoration.

1. California Water/Wastewater Agency Response Network (CalWARN)

Signatories to the CalWARN agreement (members) can request resources from other CalWARN members. CalWARN is a standard omnibus mutual assistance agreement consistent with other statewide mutual aid programs, the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).

This statewide mutual aid agreement provides a contractual relationship under which public and private water agencies can share resources such as equipment, materials, and staff during emergencies at the discretion of each participating agency. The agreement also provides liability and workers compensation protection and includes repayment provisions for agencies that choose to loan resources. Access www.calwarn.org to see which agencies participate in WARN and to request resources. The Water Authority and other participating water agencies in San Diego County are listed on the Southern OES Region VI section of the map of California. The core of the WARN website is its emergency equipment database that matches utility resources to a member's needs during an emergency. A member can locate emergency equipment such as pumps, generators, chlorinators, excavators, and trained personnel such as treatment plant operators.
Requests for emergency assistance under the agreement are directed to the appropriate designated official(s) from the list of participating water and wastewater agencies. There is no requirement for issuance of a state of emergency by the Governor before making requests for assistance.

2. The Metropolitan Water District of Southern California Member Agencies Response System (MARS)

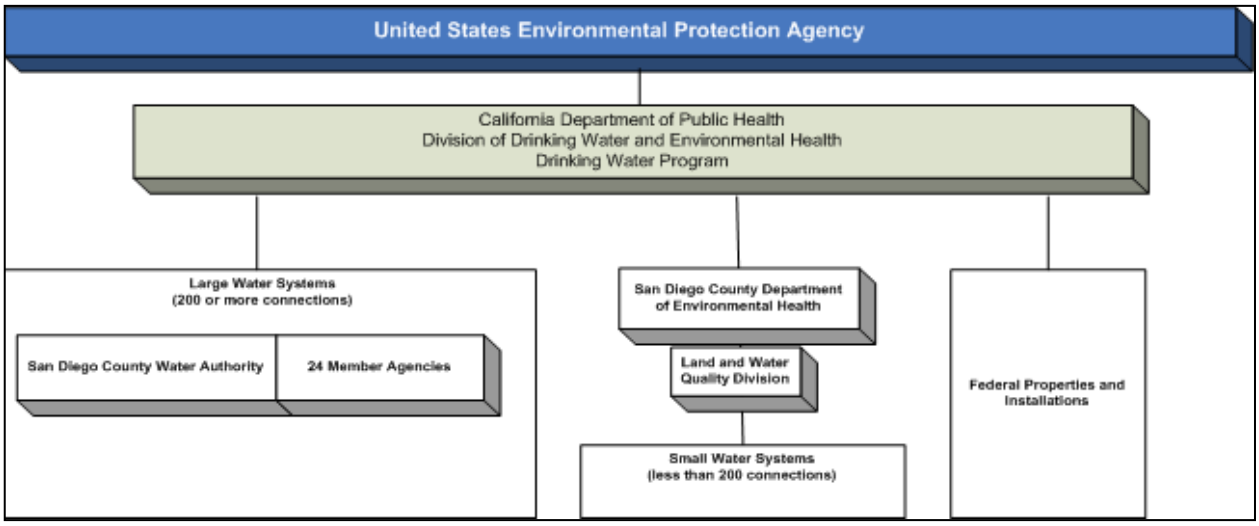
The Water Authority entered into the Metropolitan Water District of Southern California Member Agency Response System Indemnification Agreement with certain other Metropolitan Water District of Southern California agencies. This agreement has a mutual aid component in addition to an alternate means of communication in emergencies component. Make requests directly to MWD and the participating agencies when it is determined that needs may not or cannot be met within San Diego County. Requests may be made over the Member Agency Response System (MARS), or by phone, fax, and email. It is important to determine, when the request is made, whether reimbursement is expected from the borrowing agency.

3. Mutual Aid Agreement Providing for Emergency Assistance among the Member Agencies

In 1992 the Water Authority established a mutual aid agreement among its member agencies. The Mutual Aid Agreement Providing for Emergency Assistance Among the Member Agencies of the San Diego County Water Authority provides for the interchange of materials, facilities, services, equipment, and personnel to cope with problems that may arise in the event of an emergency. This agreement was renewed in 2002. The agreement outlines when and how each member agency will voluntarily aid and assist each other. Assistance may be given when the member agency's resources are exhausted or about to be exhausted. The Water Authority, in cooperation with the member agencies, maintains an inventory list of resources in WebEOC. Attachment D Mutual Aid Matrix shows the participation of Water Sector entities in the water-related mutual aid agreements.

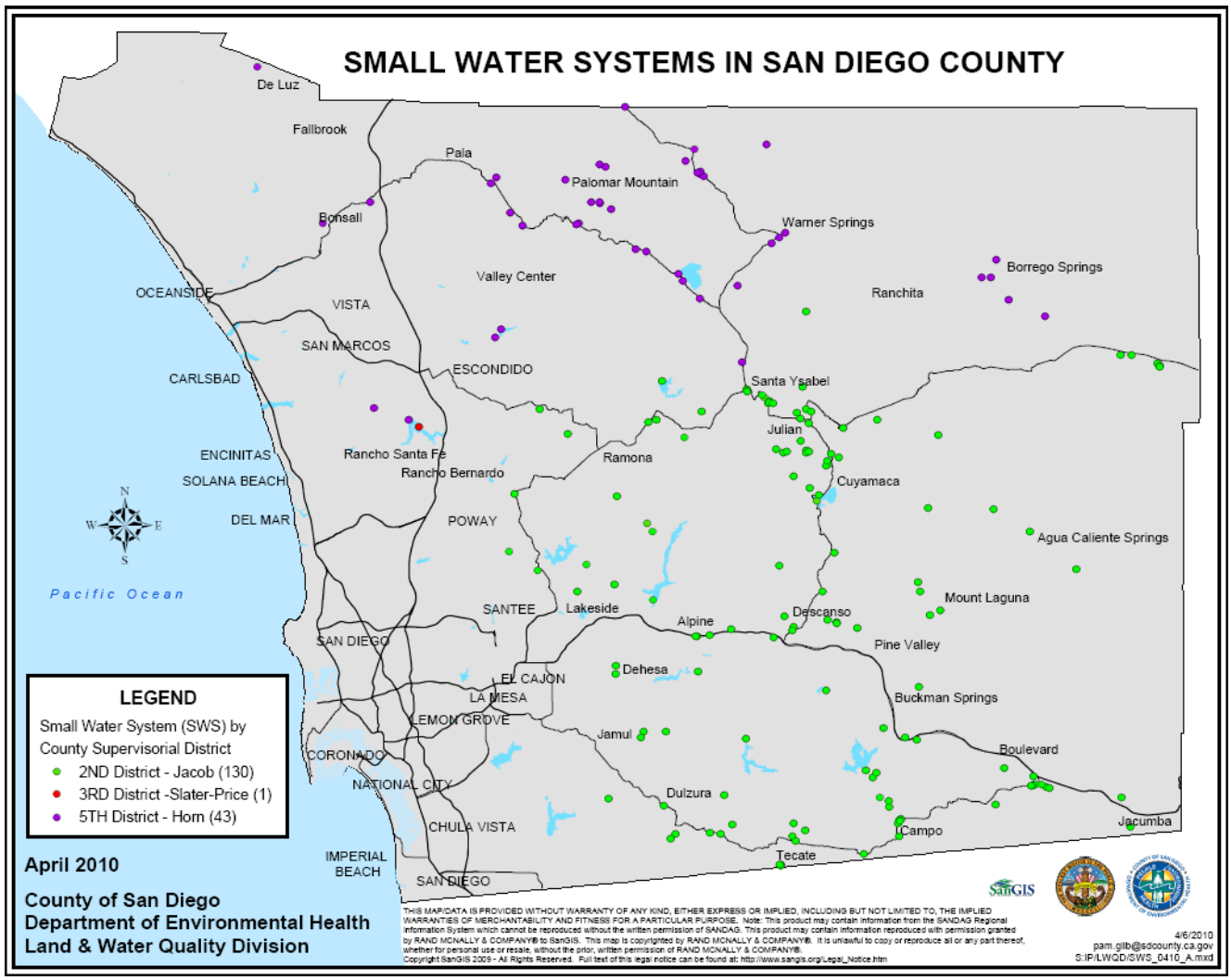
ATTACHMENT A

WATER SECTOR



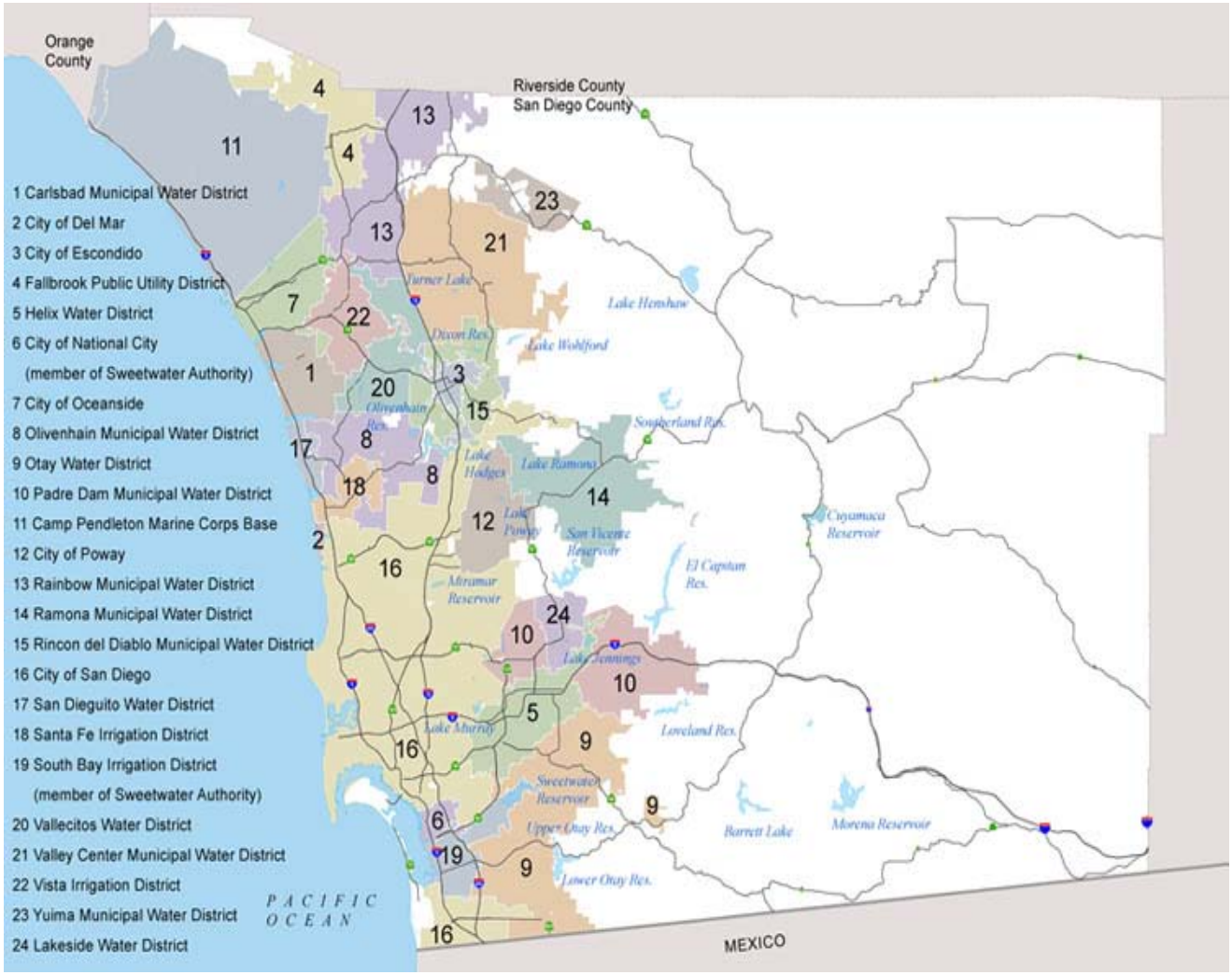
ATTACHMENT B

SMALL PUBLIC WATER SYSTEMS



ATTACHMENT C

SAN DIEGO COUNTY WATER AUTHORITY MEMBER AGENCIES



A member of the San Diego County Board of Supervisors also serves as a representative to the Water Authority board of directors.

ATTACHMENT D

MUTUAL AID MATRIX

Agency	Member Agency Agreement w/ Water Authority	Cal WARN	MARS (Metropolitan Water District of Southern California)	Other
San Diego County Water Authority	Y	Y	Y	
Carlsbad Municipal Water District	Y			
Del Mar, City of	Y			
Escondido, City of	Y			
Fallbrook Public Utility District	Y			
Helix Water District	Y	Y		*
Lakeside Water District				*
Oceanside, City of	Y			
Olivenhain Municipal Water District	Y			
Otay Water District	Y			*
Padre Dam Municipal Water District	Y	Y		*
Camp Pendleton Marine Corps Base				
Poway, City of	Y			
Rainbow Municipal Water District	Y	Y		
Ramona Municipal Water District	Y	Y		
Rincon del Diablo Municipal Water District	Y	Y		
San Diego, City of	Y			
San Dieguito Water District	Y	Y		
Santa Fe Irrigation District	Y			
Sweetwater Authority for the City of National City and South Bay Irrigation District	Y	Y		*
Vallecitos Water District	Y	Y		
Valley Center Municipal Water District	Y			
Vista Irrigation District	Y	Y		
Yuima Municipal Water District	Y	Y		

Current as of January 2010

*Shared services with Padre, Helix, Otay, Sweetwater, and Lakeside

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX K

Logistics

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX K

Logistics

ACKNOWLEDGEMENTS

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ANNEX K
LOGISTICS

I. General

The Logistics Annex to the Operational Area Emergency Plan introduces the basic concepts, policies and procedures for providing and/or coordinating the provision of services, personnel, equipment and supplies to support operations associated with natural disasters and technological perils and incidents, within the San Diego County Operational Area. It describes the governmental organizations responsible for providing such logistics (facilities, supply/procurement, personnel, transportation, equipment, and utilities) and the elements of the private sector that normally offer commodities and services. The Unified Disaster Council of the Unified San Diego County Emergency Services Organization and the Unified San Diego County Emergency Services Agreement between and among the County of San Diego and the cities in the County, provide for a county-wide emergency services program and support the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).

This Annex is intended to be a model for the county, cities and special districts to use in their emergency plans, with the realization that a city or special district may not have the personnel to fill all of the positions that will be filled at the Operational Area level.

Objectives

The overall objectives of logistics operations are:

1. Implement emergency logistics functions through pre-designated assignments from the Policy Group.
2. Procure and allocate essential resources (personnel, services and material) to support emergency operations.
3. Oversee the distribution and inventory of food stocks and other essential supplies for emergency subsistence.
4. Procure and allocate required transportation, fuel and like-equipment resources.
5. Maintain communications systems, potable water systems, electrical, sanitation, and other utility systems and services. If required, coordinate the emergency restoration of disrupted private services with public utilities.
6. Acquire supplies for care and shelter facilities, local assistance centers, multipurpose staging areas and fixed or mobile clinical and medical facilities.
7. Establish control of resources in a manner compatible with the Operational Area Emergency Plan, under the direction or coordination of the County Chief Administrative Officer (CAO) through the Operational Area Emergency Operations Center (EOC) staff.
8. Provide accountability of resources requested and expended for emergency and disaster events.

Activation and Termination

Activation and termination of this Annex occurs at the direction of the County's Chief Administrative Officer (CAO), as the Operational Area Coordinator of the Unified San Diego County Emergency Services Organization,

Activation of this Annex at the Operational Area Level normally occurs based on notification by OES that the scope of an emergency will exceed the area's resources; a disaster which by its nature or severity automatically initiates activation of the Plan; and/or an announcement that a disaster has occurred and that all personnel are to report to their disaster assignments.

Concept of Operations

This Annex applies primarily to major or potentially life-threatening or property loss situations which can result in demands upon the Unified Organization that exceed the capabilities of local resources, and possibly the Operational Area's resources.

Detailed operational concepts and emergency actions associated with various types of emergencies are provided in Appendix K, Hazard Specific Checklists. Listings of local resources, support, and services are provided in the Operational Area Resources Directory and reflect the FEMA/NIMS Integration Center Resource Typing Definitions.

Policies and procedures for the various logistics functions during emergencies are provided below.

Counties, cities and special districts are responsible for the receipt and local distribution of vital resources and the implementation of control procedures, to ensure that basic human needs are met. They also use locally prescribed procurement, contracting, and claim procedures, in order that documentation required for the ultimate payment of emergency costs can be accomplished and incurred expenses can be reimbursed.

II. Organization And Responsibilities

The organization described in this Annex covers all levels of disaster management from the cities and special districts to the county-operated Operational Area EOC, to the state and federal level. The Basic Plan networks all agencies involved in support of the emergency with their respective roles, to provide for an effective emergency response system to handle all types of disasters.

Operational Area - San Diego County

The San Diego County Chief Administrative Officer (CAO) coordinates the Emergency Services Organization and the County emergency management program. In a disaster located entirely within the County unincorporated area, the CAO directs emergency services and operations. In a disaster involving one or more jurisdictions, or special districts, the CAO serves as the Coordinator of Emergency Services. The Operational Area Logistics Coordinator in the Operational Area EOC serves at the direction of the CAO via the EOC Director.

The Operational Area Logistics Coordinator has the overall responsibility for coordinating countywide Logistics operations and provides relevant information and submits all requests for support to other jurisdictions in the Operational Area, or to the Regional Logistics Coordinator at the California Emergency Management Agency (Cal EMA) Regional EOC at Los Alamitos.

Mutual Aid Region

The Mutual Aid Region Logistics Coordinators, who function under the direction of the California Emergency Management Agency (Cal E M A) Regional Administrator, are selected by representatives of the designated state agencies and are responsible for coordinating appropriate resources and/or support activities. (Assignments depend on regional availability of State agency representatives.) The Coordinators have the overall responsibility for coordinating operations within their areas. All relevant information and requests for support are submitted to the appropriate State Resource Coordinators.

State

The Secretary of the California Emergency Management Agency or a designated representative, has overall responsibility for coordinating state-wide Logistics operations and requirements.

Federal

During emergencies, certain federal agencies can provide Logistics to state and local governments under separate statutory authorities. Following a Presidential declaration of an Emergency or Major Disaster, assistance provided by federal agencies is coordinated by the designated Federal Coordinating Officer.

Private Sector

Transportation Industries

Transportation industries function under their own management and operate their systems and facilities to provide the maximum possible service within their capabilities and to fill essential needs as specified by federal, state, and local government authorities. This includes responsibility for continuity of management, protection of personnel and facilities, conservation of supplies, restoration of damaged lines and terminals, rerouting, expansion or improvement of operations, and the securing of necessary personnel, materials, and services.

Utility Companies

The utility companies, in mutual support of each other and the state and local governments, have provided a representative working in Cal EMA to manage its Utilities Division. The Division has developed the State of California Utilities Emergency Plan, which provides for electric, gas, and water coordinators at the Mutual Aid Region and State levels. The Coordinators, who are representatives of the various utility organizations, provide a channel for mutual aid and other support as required. The Utilities Emergency Plan will be utilized during major emergencies. Additionally, the local utilities have assigned positions, telephones and radio communications links within the Operational Area EOC.

Heavy Construction Industries

Heavy construction industries function under their own management and operate their systems and facilities to provide the maximum possible service within their capabilities and to fill essential needs as specified by federal, state, and local government authorities. This includes responsibility to furnish materials, operate equipment, and supply skilled personnel as long as necessary through the direction of civil and military authorities in charge of disaster relief.

III. The Logistics Section – Organization And Responsibilities

The Logistics Section coordinates the procurement and provision of emergency resources for the Operational Area. It is one of five functional sections that is operational when the Operational Area EOC is fully activated. It is staffed by a Section Chief and pre-designated emergency personnel, and may be augmented by representatives from private industry, military and charitable organizations. This section also provides additional advisors to the CAO, who provide expert advice on resource allocation, distribution, priorities, expenditures and related logistical matters.

Logistics Section Chief

The Logistics Section Chief (provided by the Office of Emergency Services) directs the Logistics Section and is responsible for providing facilities, services and material in support of an emergency or disaster. The Logistics Section Chief participates in the development of the EOC Action Plan. This Section Chief activates and supervises the units of the Logistics Section during EOC operations. He/she has the overall responsibility for coordinating Operational Area Logistics operations and provides information and submits requests for support to the Mutual Aid Region Logistics Coordinator and to the State.

Communications Unit

The Communications Unit Leader, under the direction of the Logistics Section Chief, is responsible for developing plans for the effective use of communications equipment and facilities; installing and testing of communications equipment; coordinating with the Incident Communications Center; the distribution of communications to incident personnel; and the maintenance and repair of communications equipment.

The Communications Unit Leader is provided by the Sheriff's Wireless Services Division. The Communications Unit Leader is responsible for providing and maintaining radio and wireless data communications in support of ongoing operations. During emergencies, the Communications Unit Leader is responsible for restoring failed communications links, and for providing additional communications services as required to facilitate recovery efforts. Radio communications are part of the Sheriff's Wireless Services Division. All repairs to wireless systems within the EOC are handled by them.

Included among the Communications Unit's responsibilities are to:

1. Ensure radio resources and services are provided to EOC staff as required.
2. Ensure that a communications link is established within the EOC.
3. Provide management and coordination of County-controlled radio frequency resources assigned to field incidents and their Incident Communications Centers

Information Technology (IT) Unit

The IT Unit Leader is provided by the County Technology Office. This IT Unit Leader position is also responsible for acting as liaison between the EOC and the County Technology Office for the request and acquisition of telecommunication and computer services required to support emergency assistance centers as dictated by the EOC Policy Group.

Included among the IT Unit's responsibilities are to:

1. Ensure telephone and computer resources and services are provided to EOC staff as required.
2. Determine the specific computer requirements for all EOC positions.
3. Ensure network access for all EOC staff, including access to emergency information management software.
4. Ensure requests for telecommunications and computer services are expedited to the appropriate parties for execution as required.

Transportation Unit

The Transportation Unit Leader is provided by the Department of General Services, and is responsible for the transportation of personnel, equipment, supplies and subsistence stocks and the transportation of fuels, energy systems and equipment for emergency operations. The Unit Leader is also responsible for transportation routing and scheduling, and the work assignments for transportation support during EOC operations. This unit is also responsible for the direct servicing, repair, and fueling of all transportation apparatus and equipment, as well as, providing special transportation and support vehicle services, and maintaining records of transportation equipment use and service.

Included among the Transportation Unit's responsibilities are

1. Process transportation requests, to include all modes of transportation including ground, rail, air, and sea.
2. Determine the number of buses and other transportation resources available to support an evacuation.
3. Contact County Office of Education and School Districts to determine availability of buses and drivers.
4. Coordinate maintenance and repair of primary tactical equipment vehicles and mobile support equipment.

5. Manage the operation of a transportation pool which can be used for transporting personnel from one location to another.
6. Coordinate with fuel suppliers to establish distribution priorities.
7. Develop a Transportation Plan which identifies routes of ingress and egress, thus facilitating the movement of response personnel, the affected population and shipment of resources and material.
8. Identify alternate routes when primary routes are impassable.
9. Utilize emergency information management software for the Operational Area's formal resource tracking system.

Facilities Unit

The Facilities Unit Leader is responsible for the activation and maintenance of facilities that are utilized during emergency operations. The Facilities Unit Leader is provided by the Department of General Services. He/she ensures that proper sheltering, housing and personal sanitation facilities are maintained for emergency operations facilities, including the EOC. The Facilities Unit is responsible for safeguards at those facilities operated by the County, cities, and/or special districts in response to the emergency, to protect personnel and property from injury, damage or loss.

The Facilities Unit is also responsible for identifying facilities available to be used in the emergency response as staging areas, warehouses, distribution centers, collection points, alternate worksites for government employees, etc.

Supply Unit

The Supply Unit Leader is responsible for administering purchases, requisitions, contracts and funding allocations, including cost-sharing agreements between functional organizations (special districts, cities and/or county departments). The Supply/Procurement Unit Leader is provided by the Department of Purchasing and Contracting. The Unit Leader reports to the Logistics Section Chief.

In coordination with the Finance Section of the OA EOC, the Supply Unit's responsibilities include:

1. Purchase requisition control and recording
2. Purchase order control and recording
3. Inter-governmental purchasing control
4. Emergency purchasing/renting procedures/instructions
5. Emergency purchasing administration for unified and mutual aid
6. Contract, credit card and purchase bidding control
7. Cost/price data processing
8. Claims and negotiations
9. Special purchasing drafts, exchanges and lending control
10. Fiscal and financial estimating

11. Cost-price estimating
12. Maintain a list of stand-by contracts for emergency use.
13. Maintain a current resource directory and inventory for necessary supplies, equipment and services based on the FEMA/NIMS Integration Center Resource Types.
14. Coordinate the location and support of staging areas, support facilities, and additional resources as necessary with the Facilities and Personnel Units.
15. Coordinate the locations of collection points and sorting areas for donations via Volunteer San Diego and San Diego 211 information line.
16. Utilize emergency information management software for the Operational Area's formal resource tracking system.

This unit is also responsible for ordering or requisitioning equipment, supplies and services (which includes food and water as required); receiving, storing provisions, supplies and equipment to support emergency and EOC operations; and managing its inventories.

EOC Support Unit

The EOC Support Unit Leader is provided by the Department of Human Resources and is responsible for managing the Message/Status Boards, coordinating Message Center communications into and out of the EOC and providing general support to EOC staff.

Included among the EOC Support Unit's responsibilities are to:

1. Ensure adequate supplies are available in the EOC.
2. Coordinate Message Center activities and monitor communications locations without assigned personnel (i.e., fax machines).
3. Ensure that incoming phone lines are staffed and calls are answered and messages are recorded.
4. Survey the need for, and coordinate the provision of support staff to the OA EOC with the Personnel Unit.
5. Provide assistance in the coordination of meals for EOC Staff.
6. Facilitate requests for EOC equipment and supplies where possible, such as position guides, emergency plans, telephone directories, message forms and activity logs.
7. Assist the Documentation Unit in collecting, organizing and filing EOC documentation.

Personnel Unit

The Personnel Unit Leader, is provided by the Department of Human Resources, and is responsible for registering labor forces, insuring them under the appropriate workers compensation agreements, and keeping employment records. All non-governmental volunteers should be registered as

Disaster Service Workers by the Office of Emergency Services. The Office of Emergency Services maintains a database of registered Disaster Service Workers.

Included among the Personnel Unit's responsibilities are

1. Provide personnel resources as requested in support of EOC and field operations.
2. Develop and maintain the EOC Organizational Chart,, which includes creating a current phone list and inserting the name of the County employee working in each position at the time of EOC activation, using templates for the phone lists pre-loaded into the WebEOC system.
3. Identify back-up and relief personnel for Branch Coordinator, Unit Leader and Support Staff positions as requested by the EOC Director or Section Chiefs.
4. Coordinate with the Security Officer to assist in the verification of reporting personnel.
5. Insert action word If temporary workers or individuals with specialized skills need to be obtained, contact private personnel providers.
6. Request state assistance… In the event of staffing shortfalls and upon request by the EOC Director, request State assistance via the Emergency Managers Mutual Aid System (EMMA) or the Emergency Management Assistance Compact (EMAC).
7. Coordinate spontaneous volunteers in coordination with the Volunteer Unit Leader in the OA EOC Operations Section.
8. Coordinate the requests for and assignments of Disaster Service Workers and other trained volunteers.

ATTACHMENT A

STATE RESOURCES AND CAPABILITIES

The state agencies listed below have varied capabilities and responsibilities for providing, or coordinating the provision of, Logistic services:

Supply Procurement

Principal:
Department of General Services (Office Procedure),or Department of Food and Agriculture, Depart of Fish and Game (Food), Energy Commission, Department of Conservation (Fuel).

Personnel

Principal:
Employment Development Department

Support:
Department of Correction, Education, and Forestry; Military Department; Personnel Board; California Youth Authority; University of California: Community Colleges

Transportation

Principal:
Department of Transportation

Support:
California Highway Patrol; California Maritime Academy; Department of General Services (Fleet Administration Division), Department of Motor Vehicles, Transportation, Public Utilities Commission

Utilities

Principal:
California Emergency Management Agency (Utilities Division)

Support:
Energy Commission; Department of Water Resources; Public Utilities Commission

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX L

Emergency Public Information

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX L

Emergency Public Information Plan

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ANNEX L
EMERGENCY PUBLIC INFORMATION

I. General

Purpose and Scope

A vital part of the Unified Emergency Services Organization's responsibility during an emergency or disaster is providing the public with accurate information and instructions. The Office of Emergency Services (OES) and the Operational Area Media Team work closely with the news media to accomplish this task. This Annex is designed to provide a framework for the most efficient, accurate, and complete dissemination of information. It provides for the conduct and coordination of public information activities and establishes a mutual understanding of responsibilities, functions, and operations.

The procedures, as outlined, are used in the event of any type of emergency or disaster. Some examples are fire, earthquake, flooding, hazardous materials incident, and terrorism.

This Annex is used in an emergency situation at the San Onofre Nuclear Generating Station, as well, in combination with Inter-jurisdictional Procedure (IP) #6 and Standard Operating Procedure (SOP) #6 of the County's Nuclear Power Plant Emergency Response Plan. The two documents include specialized procedures for public information in an incident at San Onofre Generating Station.

Policies and Guidelines

1. Information is disseminated according to the following policies:
    A. The public has the right and need to know lifesaving and other important information related to emergencies or disasters as soon as it is available.
    B. The news media plays a key role in assisting OES in disseminating emergency or disaster-related information to the public. Representatives of the news media are, therefore, treated with the respect warranted by that role.
2. The following guidelines are in effect:
    A. Operational Area disaster-related information is collected and disseminated through the Operational Area Emergency Operations Center (EOC).
    B. The Operational Area Media Team members process emergency information and decide what should be published in news releases and/or videos to be distributed via the San Diego County Emergency Homepage Web site, social media sites, or to create speaking points for news conferences. Spokespersons for each outside agency should speak within that agency’s jurisdiction to avoid giving conflicting information to the public. All County departments will speak in a coordinated fashion within the EOC and field JICs (Joint Information Centers) and will

collaborate with outside agencies.

C. The County Media Team generally disseminates information about areas within the County's jurisdiction only, but makes referrals to, and coordinates with, other jurisdictions. This communication will be coordinated through the responding jurisdiction's PIO or a representative present at the EOC. In addition, other agency's Web sites can be linked to the San Diego County Emergency Homepage Web site.

D. The County Media Team initiates and responds to local and national news media, providing information at regular and frequent press briefings as information becomes available. Questions from news media representatives are answered completely and truthfully to the extent possible from information available.

E. Only information verified by the appropriate EOC County Media Team or agency personnel is disseminated.

F. For more detailed information, refer to a condensed version of the County Communications Office Emergency Communications Plan (Attachment H), which is regularly updated.

G. Refer to Attachment I for County Social Media Policy for PIOs/County Employees During an Emergency/Disaster.

II. Operational Area Media Team

A. The County Media Team is comprised of public information personnel, who assist with disseminating emergency public information during emergencies.

B. The County Communications Office Director or Assistant Director serve as coordinators of the Team.

C. PIOs from responding jurisdictions should be considered as members of the County Media Team at the discretion of the Director.

D. The Media Team is activated at the request of the Chief Administrative Officer (CAO) or the Director of OES, and the discretion of the Director of the County Communications Office (CCO). Depending on the severity of the incident, the CCO Director will contact the Assistant Director and County Television Network manager.

E. The Assistant Director will contact the County Media Team to staff the EOC, taking into consideration the severity and expected duration of the emergency. For a major incident, this will include SD County Emergency Website Editors, Board of Supervisors (BOS) liaison, and at least two or more County PIOs, in addition to the Director and Assistant Director.

F. The primary role of the County Media Team is to compile and disseminate information to the public via the news media, through updates/news releases posted on the San Diego County Emergency Homepage Web site and official

County Web site, as well as various social media sites. The role also includes coordinating news conferences.

III. Responsibilities Of The Operational Area Media Team

A. Schedule regular and frequent briefings for news media representatives in the Media Briefing Room of the EOC. Also, brief Board of Supervisors and their staff as well as other visiting officials or ensure that a County Chief Administrative Officer Staff Officer handle those duties.

B. Respond to questions as Operational Area spokespersons and arrange for interviews with local and regional subject matter experts.

C. Write and distribute press releases to the media. Runners at the EOC will distribute news releases to EOC personnel including 2-1-1 San Diego staff who will answer public inquiry phone lines.

D. Refer the media to the appropriate spokesperson within an agency or jurisdiction for information regarding activity within that entity's area of responsibility.

E. Monitor Web EOC, news reports (broadcast, print or online), also including social media sites and blogs and take action to correct any inaccurate information being reported. There are seven television sets in the JIC room, which will be used for monitoring purposes.

F. When necessary, maintain liaison with the Cal EMA PIO, the San Onofre Nuclear Generating Station (SONGS) Emergency News Center, the Federal Emergency Management Agency (FEMA) PIO and/or any other public information operations that are activated.

G. Notify the news media of any changes in the status of the EOC.

H. Monitor media reports and information coming from 2-1-1 San Diego operators to indicate the degree to which the public is taking appropriate action and relay this information to the EOC. Send out corrections to the media when necessary. Staff from 2-1-1 San Diego will relay rumors and other information/questions to the County Media Team. The County Media Team will attempt to verify or answer these rumors, information or questions. The Team will then relay this information to the public via press release, news conference, interviews, SD County Emergency Homepage Web site, and to the 2-1-1 San Diego staff. Calls will be monitored for trends and passed to the Team for appropriate action.

I. Each County Media Team shift will write a summary of the newest "facts and figures" to print and leave on the next shift's desk so they will immediately be up to speed upon arrival.

IV. Operation

The County Media Team staffs the Operational Area EOC or Joint Information Center (JIC) when necessary. Team members must be in contact with each other quickly to determine each person's mobility and ability to access the County Web network. It is possible that some team members will work from remote locations because they cannot get to the EOC. A few Media Team members have VPN access to update Web sites from home.

In some situations, a Team member will be sent to the incident command center to acquire up-to-date information for the EOC Operational Area Media Team. This Team member would not be authorized to speak to the media unless specifically directed to do so by the CCO Director or JIC Manager.

Joint Information Center (JIC)

A JIC is a physical location where public information staff representing all agencies and organizations involved in emergencies/disasters can coordinate and disseminate timely, accurate, easy-to-understand information to the public. For certain incidents the OA EOC will host the JIC in a side room connected to the EOC. The JIC can accommodate PIOs from additional agencies and organizations directly participating in the emergency in order to ensure multi-agency and multi-jurisdiction coordination of all messages to be provided to the public.

The CCO Director will consult with the responding agency's PIOs to determine if an alternate or secondary JIC is needed. When deciding if an alternate JIC is necessary the following should be taken into account: safety, proximity to incident or incident command, access to electricity, internet connectivity, and cell service. Participants at an alternate JIC, including the media, must have access to the most current information.

When necessary, Operational Area Media Team coverage of the EOC is set up on a basis of two 12-hour shifts per day. The members are divided into Team 1 (Shift 1) and Team 2 (Shift

The CCO Assistant Director will coordinate staffing.

The JIC Room, in the EOC, is headquarters for the Operational Area/County Media Team. The materials and supplies listed in Attachment A are stored at this location.

V. Dissemination Of Information

A. The County Media Team and OES staff will use a variety of methods of disseminating emergency information. The Media Team will work to get news coverage utilizing news conferences, news releases, videos and social media Web sites. Web EOC is an internal tool for gathering information for dissemination to the public and media. It will also be used to keep copies of news releases.

B. The County Television Network (CTN) will show continuous Info Guide Pages of relevant emergency information in between airing live news conferences or other

emergency programming. Videos and live news conferences will be provided online through various Web sites.

C. The County Media Team will contact Orange County or Los Angeles County radio stations if local stations in San Diego are off the air due to power failure.

D. The San Diego County Emergency Homepage Web site will be a one-stop information source on issues such as road closures, evacuation center locations, event chronology, news releases and links to other agencies throughout the region. This Web site will be an information source for the news media, the public and the staff working the 2-1-1 San Diego. Social media sites as well as video uploads will also be available. Links on all social media sites, official County page and Emergency Web sites will all point back to each other.

E. The County Media Team will also help write or edit special projects such as newspaper supplements, leaflets distributed by volunteers, or public safety bullhorn messages broadcast by emergency personnel.

F. Emergency Alert System (EAS): In some emergencies, the Emergency Alert System (EAS) is a viable means of communication; however, because of the system's limitations there are many circumstances where it would not be appropriate to use.

1. The EAS radio equipment is located at the EOC.
2. It provides a communication link to the primary EAS stations:

   KOGO 600 kHz and KLSD 1360 kHz.
3. It is operated by personnel at both local radio stations.
4. The primary stations, in turn, relay the information to the other radio and television stations and, therefore, to the public.
5. Sample EAS messages are kept by OES and on file in the EOC. San Onofre messages are included in the Nuclear Power Plant Emergency Response Plan as well. Public health advisories are included in the samples. Each message should instruct viewers or listeners to go to the San Diego County Emergency Homepage Web site for more information and/or to continue to monitor local media.
6. The EAS messages are selected by designated staff of OES at the direction of the Sheriff or at the request of other public safety agencies. Messages are approved by JIC, and then broadcast over the EAS radio. The CCO Director or County Media Team may assist in writing messages as needed.

G. Community Emergency Notification System (CENS):

In 2006, the County of San Diego implemented the AlertSanDiego (ASD) communications system. ASD is currently available throughout the San Diego Region. ASD enables emergency dispatchers to call residents, via a reverse 911 callout system, and alert them to emergency actions which may need to be taken. ASD combines GIS mapping technologies with 9-1-1 calling data in an easy-to-use interface. The system, which is hosted by Twenty First Century Communications Inc., has the capability of making thousands of calls per hour by

using automated calling technology. The Office of Emergency Services, incorporated cities, or Sheriff's Communications Center are responsible for the activation of ASD.

AlertSanDiego has limitations which include:

1. Phone lines must be working for residents to receive calls and/or messages. If residents have registered their cell phone through AlertSanDiego, then it is still possible for them to receive messages.
2. Cell phones are not in the database and those residents will not receive the call, unless they have registered their cell phones through AlertSanDiego.
3. If residents are on a dial-up internet connection, currently using the phone, or subscribe to call blocking services, unless they are registered through AlertSanDiego, they will not receive the call.

H. A list of County PIO's who speak Spanish is kept in the CCO Emergency Communication Plan.

I. A list of bilingual County employees is kept at the EOC. These employees may be called upon during a disaster to assist with translating and interpreting services.

VI. Rumor Control

2-1-1 San Diego and the Office of Emergency Services have entered into a Memorandum of Understanding dated September 2009 (See Attachment G). In a disaster scenario, 2-1-1 San Diego's primary role will be to maximize access to community resources by responding via telephone and Internet to non-life threatening requests for information, including but not limited to: general assistance, referrals to shelters, local assistance center locations, mental health resources, food banks, etc. 2-1-1 San Diego has phone specialists who are bilingual in Spanish and have access to other languages through an interpreter service. 2-1-1 San Diego also has Telephone Text (TTY) capabilities for the hearing impaired.

Once the EOC is activated, 2-1-1 San Diego will serve as support to the EOC by providing Public Information and Rumor Control. 2-1-1 San Diego will actively seek new and updated information on the emergency/disaster, and disseminate such information to agencies, community-based organizations, the countywide disaster response and recovery network, and the general public in accordance with the public information guidelines within the EOC.

ATTACHMENT A

MATERIAL AND SUPPLIES

THE MEDIA

In order to facilitate the gathering and dissemination of disaster information, the following items are kept at the Operational Area EOC for news media representatives:

A. Adequate working space in the PIO Room separate from that of EOC staff.

B. Desk space, bulletin boards, etc.

REFERENCE MATERIALS

The following reference materials are permanently available in the Operational Area EOC and are regularly updated by the OES staff:

A. County of San Diego office telephone directory.

B. Telephone books, including the North County and suburban editions.

C. List of emergency telephone numbers.

D. List of referral numbers, comprised of officials in other jurisdictions.

E. List of County officials with key roles in emergencies, description of those roles, titles, and phone numbers.

F. Copies of the Operational Area Emergency Plan.

G. List of translators.

H. List of local news outlets and contact info.

I. Web EOC Login info.

EQUIPMENT

The following equipment is permanently available in the EOC for use by the Operational Area Media Team and Media representatives.

A. Computer and printers

B. Adequate telephone lines, LAN drops and instruments

C. Paper, note pads, pens

D. Television monitors, computers and radio available for monitoring news reports

E. Fax machines

F. Copy machines

ATTACHMENT B

CALIFORNIA EMERGENCY PUBLIC INFORMATION SYSTEM

The California Emergency Public Information System includes city, Operational Area,,Cal EMA) Mutual Aid Region, State and Federal PIOs and public information representatives from private agencies. The scope of the emergency will determine how many levels of the system become actively involved in Emergency Public Information (EPI) releases.

City and Operational Area/County PIOs will release EPI locally and will provide status information to PIOs at the next higher level of government. They should coordinate in advance with the public information representatives of local private agencies such as the Red Cross, Salvation Army, and utility companies, so that mutual needs may be fulfilled during emergencies.

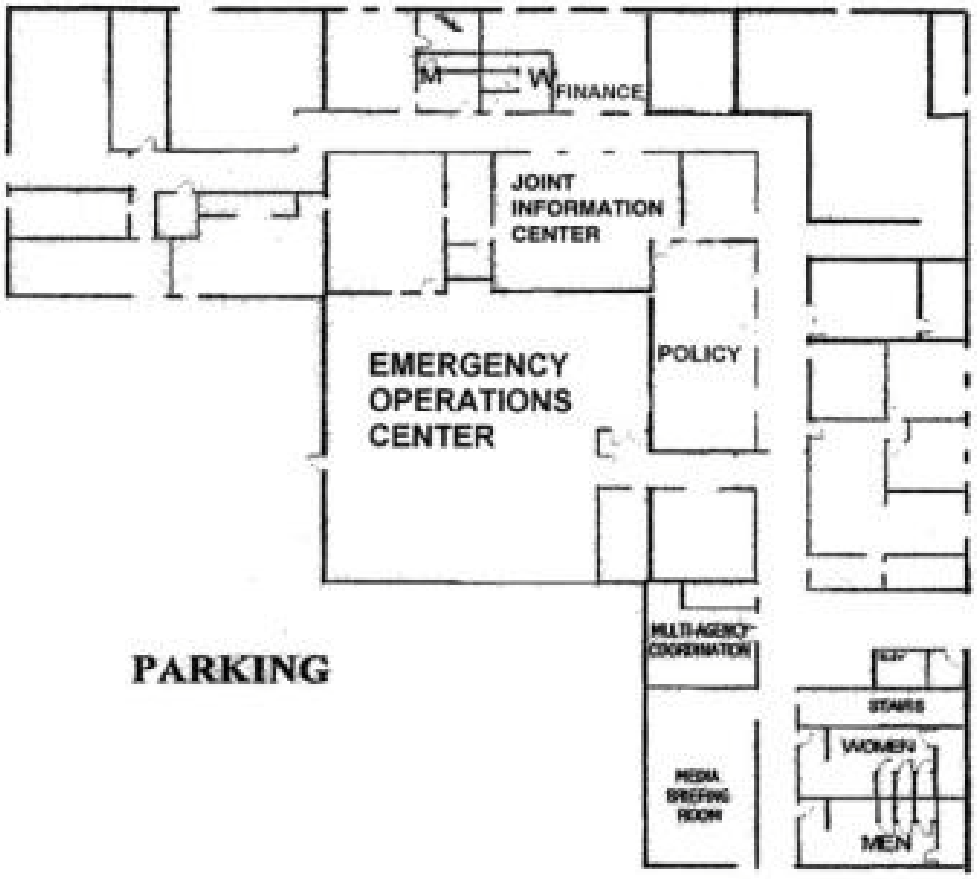
When the Cal EMA Emergency Public Information Organization at the State Operations Center (SOC) in Sacramento is activated, PIOs will be assigned to the affected Cal EMA Mutual Aid Region(s) to gather information from local jurisdictions and provide it to the Cal EMA PIO. Mutual Aid Region PIOs may reply to media calls, and will relay information from the state and federal level to local PIOs.

The Cal EMA PIO will summarize the disaster situation for the media and report on state agency response activities. The Cal EMA PIO will also establish statewide Emergency Alert System (EAS) programming, keep the Federal Emergency Management Agency (FEMA) PIO informed of developments, and provide EPI Staff support to local jurisdictions on request. The Cal EMA PIO will coordinate news releases pertaining to a particular jurisdiction with that jurisdictional PIO *prior* to dissemination to the news media. When prior coordination is not feasible, the local PIO will be informed at the earliest possible opportunity.

The FEMA PIO will provide information on federal response efforts and federal assistance programs and may provide EPI Staff support to the State on request. The federal government determines nationwide EAS programming.

ATTACHMENT C

Operational Area Emergency Operations Center



ATTACHMENT D

MEDIA ACCESS REGULATIONS

The following are extracts from Government Codes and Regulations relating to the granting of access to the media to closed or restricted areas during incidents and disasters:

California Penal Code

Section 409.5 Power of peace officers to close areas during emergencies; Entering or remaining within area as misdemeanor; Exception as to newspaper representatives, etc.

A. Whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire, earthquake, explosion, accident or other disaster, officers of the California Highway Patrol, California State Police, police departments or sheriff's office, any officer or employee of the Department of Forestry designated a peace officer by subdivision (f) of Section 830.3 and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (I) of Section 830.3, may close the area where the menace exists for the duration thereof by means of ropes, markers or guards to any and all persons not authorized by such officer to enter or remain within the closed area. If such a calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

B. Officers of the California Highway Patrol, California State Police, police 0departments, or sheriff's office or officers of the Department of Forestry designated as peace officers by subdivision (f) of Section 830.3 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions which are set forth in this section whether or not such field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

C. Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within such area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

D. Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

ATTACHMENT E

Federal Aviation Regulations
Subpart B - Flight Rules
Section 91.137* Temporary Flight Restrictions

A. (Whenever the Administrator determines it to be necessary in order to prevent an unsafe congestion of sight-seeing aircraft above an incident or event which may generate a high degree of public interest, or to provide a safe environment for the operation of disaster relief aircraft, a Notice to Airmen will be issued designating an area within which temporary flight restrictions apply.

B. When a Notice to Airmen has been issued under this section, no person may operate an aircraft within the designated area unless:

1. That aircraft is participating in disaster relief activities and is being operated under the direction of the agency responsible for relief activities;
2. That aircraft is being operated to or from an airport within the area and is operated so as not to hamper or endanger relief activities;
3. That operation is specifically authorized under an IFR ATC clearance;
4. VFR flight around or above the area is impracticable due to weather, terrain, or other considerations, prior notice is given to the Air Traffic Service facility specified in the Notice to Airmen, and en route operation through the area is conducted so as not to hamper or endanger relief activities; or,
5. That aircraft is carrying properly accredited news representatives, or persons on official business concerning the incident or event which generated the issuance of the Notice to Airmen; the operation is conducted in accordance with 91.79 of this chapter; the operation is conducted above the altitudes being used by relief aircraft unless otherwise authorized by the agency responsible for relief activities; and further, in connection with this type of operation, prior to entering the area the operator has filed with the Air Traffic Service facility specified in the Notice to Airmen a flight plan that includes the following information:
   i. Aircraft identification, type and color.
   ii. Radio communications frequencies to be used.
   iii. Proposed times of entry and exit of the designated area.
   iv. Name of news media or purpose of flight.
   v. Any other information deemed necessary by ATC.

*** To activate Section 91.137, contact the FAA Regional Operations Center @ (310) 725-3300.**

ATTACHMENT F

EMERGENCY PUBLIC INFORMATION PRIORITIES

Lifesaving/Health Preservation Instructions

A. What to do (and why).

B. What not to do (and why).

C. Information (for parents) on status and actions of schools (if in session).

D. Hazardous/contaminated/congested areas to avoid.

E. Curfews.

F. Road, bridge, freeway overpass, and dam conditions, and alternate routes to take.

G. Evacuation:

- Routes
- Instructions (including what to do if vehicle breaks down).
- Arrangements for persons without transportation.

H. Shelter Location

I. Location of mass care/medical/coroner facilities, food, safe water. Status of hospitals.

J. First aid information or health precautions (e.g., for those with respiratory problems).

K. Pet/Animal shelter location

L. Emphasize 2-1-1 San Diego. 9-1-1 should only be used for lifesaving emergencies Stress to out-of-area media that people should NOT telephone into the area. Lines must be kept open for emergency calls.

M. Instructions/precautions about utility use, sanitation, how to turn off utilities.

N. Essential services available--hospitals, grocery stores, banks, pharmacies, etc.

O. Weather hazards (if appropriate).

Emergency Status Information

A. Media hotline numbers, which are various County PIO cell phones. Leaving voicemail message greeting to announce shift changes and correct number to call. Utilize 2-1-1 San Diego for all public phone calls.

B. San Diego County Emergency Homepage: www.sdcountyemergency.com. Also, County Twitter and Facebook pages. Focus is still County Emergency Page for most info.

C. Description of the emergency situation, including number of deaths and injuries, property damage, persons displaced.

D. Description of government and private response efforts (mass care, medical, search and rescue, emergency repair, debris clearance, fire/flood fighting, etc.).

E. List of priorities in summary form on a "nice to know" rather than "vital to know and act upon" basis.

F. Status of Local Proclamation, Governor's Proclamation and Presidential Declaration.

G. Where residents should report/call to volunteer.

H. Internal component/County Employees: Also, information internally for County employees going to work.

I. How people in other areas can obtain information about relatives/friends in the disaster area. Coordinate with Red Cross on release of this information. Refer public to 2-1-1 so they can contact Red Cross and/or post Red Cross phone number on various Web sites.

Other Useful Information

A. Usually this type of information will be released in the Post-Emergency Period because of lack of time and other priorities during other phases.

B. State/Federal assistance available.

C. LACs (Local Assistance Centers) opening and closing dates/times/locations

D. Historical events of this nature.

E. Charts/photographs/statistics from past events.

F. Human interest stories.

G. Acts of heroism.

H. Historical value of property damaged/destroyed.

ATTACHMENT G

MEMORANDUM OF UNDERSTANDING
Between 2-1-1 San Diego and San Diego County Office of Emergency Services

Background

In July 2000, the Federal Communications Commission dedicated the 2-1-1 dial code to the exclusive use of community information and referral services (I&R). In February 2003, the California Public Utilities Commission (CPUC) issued rules for 2-1-1 services in each county in the State of California. INFO LINE of San Diego County has been designated as the regional provider for the county of San Diego, and introduced 2-1-1 services, effective January 1, 2005.

Accordingly, INFO LINE of San Diego County doing business as (dba) 2-1-1 San Diego, as the regional provider of information and referral services, has developed an emergency operations plan, which is based on the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and is integrated into the emergency planning and response processes of the San Diego County Operational Area.

The San Diego County Office of Emergency Services (OES) has overall disaster planning responsibility for the San Diego County Operational Area and is the lead agency for disaster preparedness and coordination. OES is also responsible for activating the Emergency Operations Center (EOC), which is the centralized control and coordination point for emergency operations and decision-making for the operational area. Activating the EOC, and its corresponding functional responsibilities, are clearly described in the San Diego County Operational Area Emergency Plan and follow the guidelines of SEMS and NIMS.

PURPOSE:

A. To recognize the respective roles and responsibilities of 2-1-1 San Diego and of the San Diego County Office of Emergency Services in disaster preparedness, planning and operations for natural disaster, nuclear accidents, civil disorder, terrorism, or other emergencies;

B. To serve as the basis for mutual understanding and collaboration by which resources of 2-1-1 and OES can be most effectively deployed to assist the citizens of San Diego County in the event of a disaster

Role Of 2-1-1 San Diego

In a disaster scenario, 2-1-1's primary role will be to maximize access to community resources by responding to non-life threatening requests for information, including but not limited to: disaster-related emergency public information, general assistance, referrals to shelters, local assistance center locations, lost and found, mental health resources, food banks, etc.

2-1-1 will serve as support to the EOC by providing Public Information, Rumor Control, and Trend Analysis (tracking of community unmet needs).

2-1-1 will also actively seek new and updated information, and disseminate such information to agencies, community-based organizations, the countywide disaster response and recovery network, and the general public in accordance with the public information guidelines within the EOC, and as outlined in Annex L – Emergency Public Information.

Scope Of Agreement

Both agencies recognize the importance of obtaining and disseminating accurate information to all citizens in the San Diego County Operational Area. Further, it is recognized by OES that 2-1-1 has a telecommunications and information systems infrastructure that could be heavily inundated by calls and inquiries for help and assistance, once a disaster is in process. Therefore, 2-1-1 can serve as a major EOC resource for communicating information to callers, which can reduce duplication of effort and public anxiety, while also improving volunteer management, and the strategic deployment of resources to the areas most impacted by the event(s).

1. Emergency Operations Center seat assignment;
2. Integration of 2-1-1 into the operational area plan; and
3. Reimbursement of disaster-related expenses
4. Assignment of a County designated location for use as a “Virtual Call Center” for overflow calls into the 2-1-1 system
5. Assignment of county employees as surge staff
6. Local Assistance Center (LAC) support

1) Emergency Operations Center seat assignment:

A. OES agrees to create a seat for 2-1-1 within the Emergency Public Information Section of the EOC, including a workstation and associated equipment and supplies required to fully execute the agency’s emergency operations functional responsibilities;

B. OES agrees to notify the designated 2-1-1 representative once the EOC has been activated at a sufficient level to require the need for Rumor Control or Public Information, using the usual and customary communication pathways;

C. OES agrees to provide advance copies of all media releases to 2-1-1 prior to release so that 2-1-1 telephone specialists can be prepared for the resulting increased public inquiries;

D. 2-1-1 - agrees to assign one staff member, designated as the Disaster PIO or Liaison, who will be fully trained and available to perform the public information duties required in the EOC; if one cannot be assigned, OES will provide a Liaison to 2-1-1;

E. OES will provide a Liaison to be positioned at the 2-1-1 facility;

F. 2-1-1 will supply OES with the necessary contact information for the designee and will ensure that the contact information is current and up-to-date at all times;

G. When OES requests 2-1-1 assistance and the designee is seated in the EOC,

the designee will maintain contact and liaison with 2-1-1 Emergency Management Team to receive updated information on the status of agencies, and to disseminate "EOC approved" information only; and

H. 2-1-1 will also provide the EOC with information on developing trends in requests for information so that common concerns can be addressed by media releases.

2) Integration of 2-1-1 into OES' San Diego County Operational Area Emergency Plan:

A. OES agrees to include the roles and responsibilities of 2-1-1 into the operational area plan, including the seat assignment and functional responsibilities into Annex L, and a signed copy of this MOU as an attachment to the plan;

B. OES agrees to include 2-1-1 or its designee in table top or other disaster preparation planning exercises; and

C. Similarly, 2-1-1 agrees to integrate this MOU and the associated functional responsibilities into its EOP, including a signed copy of this MOU as an attachment to its plan.

3) Reimbursement of disaster-related expenses:

A. **Disaster Preparedness Activities**. It is understood that OES contract #529660 is a disaster preparedness contract designed to reimburse 2-1-1 for allowable disaster preparedness activities that they conduct during the contract period.

B. **Disaster Response Activities**. In addition to reimbursement under contract #529660 for preparedness activities, 2-1-1 may also be eligible for reimbursement during a federally declared emergency. Response-related expenditures need to be pre-approved and authorized by OES after the first 24 hours. Refer to Code of Federal Regulations 44 for cost documentation, audit and record retention requirements. Additional resource requests during a disaster response will need to be requested through the Logistics Chief and reviewed by an Operations Chief and approved by the Finance Officer on Duty per ICS and NIMS protocol. 2-1-1 agrees to collect and deliver to OES documentation as specified by OES to facilitate and assist OES in obtaining FEMA reimbursement for all allowable 2-1-1 costs associated with their response to a declared emergency.

4) Assignment of a County designated location for use as a "Virtual Call Center" for overflow calls into the 2-1-1 system:

A. OES agrees to provide a County designated location for use as a "Virtual Call Center" for overflow calls into the 2-1-1 system; and

B. OES agrees that management and staffing of the overflow center remains with 2-1-1 San Diego.

5) Assignment of county employees as surge staff:

A. OES agrees to assign county employees to emergency duty with 2-1-1 as Disaster Service Worker (DSW) assignments;

B. 2-1-1 agrees to provide disaster training to designated county employees and to maintain and provide to the county records of training, practice and duty as DSW in a manner specified by the county; and

C. 2-1-1 agrees to provide suitable working space to county DSW assignees including workstations, computers and telephone equipment.

6) Local Assistance Center (LAC) support:

2-1-1 agrees to provide support for Local Assistance Centers following a disaster. Minimum support for LAC operations will be via a dedicated telephone or telephones located at each LAC that are connected to 2-1-1 San Diego's main inquiry queue.

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levels of support may be provided as negotiated between 2-1-1 San Diego and OES based on available resources and public need.

This agreement may be terminated upon mutual consent at any time. Additionally, either party may terminate this agreement following 6 months notice to the other party.This agreement is hereby executed by the following authorized signatories:

For 2-1-1 San Diego:

John Ohanian, Chief Executive Officer — Date: 9/25/09

For County of San Diego – Purchasing and Contracting:

Winston McColl, Director — Date: 9/5/2009

ATTACHMENT H

County of San Diego
County Communications Office
Emergency Communications Plan

Introduction

The County Communications Office (CCO) Emergency Communications Plan is our roadmap for response during any County disaster or emergency. Because disasters are always unplanned and require a unique response, this plan must be flexible and quickly adaptable. Be prepared for changes, and use your best judgment when the plan doesn't make sense under the circumstances and/or your supervisors are unavailable.

Part of the mission of the CCO is "to ensure that information moves quickly and accurately to the public, employees and news organizations." During an emergency, this quick and accurate flow of information becomes critical. Therefore, all employees of the CCO are considered essential personnel during an emergency.

What to Do When an Emergency Occurs

Prepare to go to work immediately.
When an emergency situation occurs, all CCO staff should prepare to report to work immediately, unless your family or home is threatened. It is important that all CCO personnel have a family emergency plan that you can go to work knowing your family is safe.

Contact your supervisor.
During an emergency, communication with staff is crucial. After you have been assured that your family is safe, call your direct supervisor if you have not already been called. Do not wait to be called. A disaster may shut down some phone services, so be prepared to try more than one phone number. Keep your CCO phone list nearby at all times.

Your supervisor will assign your duties.CCO staff who have been issued cell phones are expected to have these items with them at all times. Keep an extra battery and charger close, perhaps in your purse or car.

If you cannot reach your supervisor, try to call one of the other managers.

Report to your designated location.
When you have an assignment from your supervisor, report for duty as soon as possible. If you cannot reach any supervisor, and you have a designated location or responsibility to assume, report there immediately.

If you can't get to work, let someone know as soon a possible. Coordinate working from home on your laptop if possible.

CTN – Roles and Responsibilities

During an emergency, the first priority for CTN is to air County news conferences and upload video to social media sites and the Emergency Web site. Secondarily we will shoot full stories, known as packages. Some CTN staff have pre-assigned positions. Descriptions of the position duties are as follows:

Supervisor/Assignment Editor: This person handles overall responsibilities for CTN programming; acts as assignment editor to send crews into the field and maintains communication with them. The Supervisor will also be in charge of determining the content of the CTN crawl and making sure it is working and kept up to date. This person concentrates on "the big picture" and makes all programming decisions and acts as CTN's liaison with the CCO Director or department's management team. Lead Producer/Reporter or Assistant Director serves as back-ups for this position.

Lead Producer/Reporter: Under direction of the supervisor, the lead producer/reporter should report to the CAC and will be responsible for producing news conferences that will air live or are taped for later broadcast. This person may cover a news conference or start producing stories with a photographer.

Social Media Liaison: Uploads videos to Emergency Web site and social media sites and/or provides video in correct format to County Media team to disseminate.

Engineer: The Engineer will be responsible for all technical aspects of CTN's operation and should report to the CAC. Under the direction of the CTN Supervisor, the Engineer will make sure CTN stays on the air for any live or taped broadcasts, and perform needed repairs and adjustments. The Engineer may also be called upon to handle directing or technical duties inside the control room during any emergency Board of Supervisors meetings in which regular staff is not available.

Photographer 1 & 2: These persons immediately head to any central command area – whether it is the EOC or other location. These photographers will shoot any news conferences at the command post, at an outlying incident command post, and/or may be called upon to go live/direct-to-cable.

Photographers 3, 4, 5: These photographers will contact their supervisor for their assignments. Unless needed elsewhere, they will take cameras and go into the field to gather images for CTN productions.

CAC Videographer: This person will perform duties as assigned and will likely be called upon to handle directing or technical duties inside the control room during any emergency Board of Supervisors meetings in which regular staff is not available. This person could also be called upon to direct or run technical elements for emergency Board of Supervisors in other locations if CAC facilities are somehow incapacitated.

Editors 1, 2: Editors handle all editing duties for incoming video. They may assemble packages, VO-SOT's or produce stills for InfoGuide.

Graphic Designer: This person is responsible for all CTN graphic elements. This person must quickly assemble InfoGuide stills and assemble all relevant graphics for programming.

Communications – Roles and Responsibilities

The primary job of the Communication Specialists (CS) and other Public Information Officers (PIO) staff is to make emergency information available to the public as soon as possible.

EOC Activation

When the EOC is activated, the CCO Director will be notified by the Director of the Office of Emergency Services or the CAO. Depending on the severity of the incident, the CCO Director will contact the Assistant Director and CTN manager.

The Assistant Director will contact the Communication Manager and/or Communication Specialists to staff the EOC, taking into consideration the severity and expected duration of the emergency. For a major incident, this will include the CCO Emergency Web Site Editors, Board of Supervisor (BOS) liaison, and at least two or more CSs in addition to the Director and Assistant Director, depending on the severity and size of the incident.

When the OES Director contacts the CCO Director to advise of EOC activation and need for media support, OES staff will contact County IT and the CTO's Office to provide to deploy 1-2 web people and a possible on-call CTO person. If the CCO Director and Assistant Director later decide that a web person is not needed for the particular incident, they will call the designated CTO contact and advise that the Web person is not needed. CTO staff will contact the County IT provider to cancel the request for Web support. If for any reason, County IT provider web staff have been deployed but do not show up, CCO should contact the designated CTO staff for assistance.

As the incident progresses, a work schedule will be created by the Director or Assistant Director. This EOC staffing schedule may also include those who can provide support functions, such as administrative, clerical or graphic assistance.

The CS team will take their assigned laptop computers to the EOC. A desktop computer, phones and a fax machine in the EOC are assigned for CCO use. Laptops are kept in car or at home for emergency use.

Assignments During an Emergency

Board and/or Elected Official Liaison

One CCO staff member or County PIO may be assigned to facilitate information flow to all Board offices. This employee may also be called upon to handle other elected officials with business at the EOC or involved in the emergency. The BOS liaison will stay in contact with BOS staff from all five districts to ensure the Supervisors are aware of breaking news events. The liaison or OES PIO may also assist with the Chair's speaking points in preparation for a news conference.

Lead PIO
Usually the Director or Assistant Director will have ultimate responsibility for all PIO-related duties. This person will direct and coordinate all aspects of the communication with the media and the public. Also, the lead PIO will coordinate communications with other governmental agencies.

Field JIC/Off-Site Command Post
It may be necessary to assign a PIO to an outside incident command center managed by a lead agency, i.e. Gillespie Field CDF Command Center during the October 2003 fires. This PIO would relay the most recent information for use at the EOC. This assignment may be staffed 24/7.

Field PIO
During some emergencies, it may be necessary to assign a PIO to an incident command center in the field. The Director or Assistant Director will determine the necessity for one or more Field PIOs.

Web Content Editor
This PIO is charged with creating and maintaining the County Emergency Homepage Web site, which will be a one-stop information source on issues such as road closures, evacuation center locations, event chronology and will be an information source for 2-1-1 San Diego. This PIO may also assist/coordinate social media site content.

New Release PIO/Writers
This PIO will be assigned to the EOC to gather and confirm information, and to write news releases and scripts for news conferences. There may be two or more people in this position.

Communication within the EOC
CSs will receive up-to-date information from EOC briefings, situation status ("sit-stat") reports, and situation boards. One PIO will be stationed in the EOC situation room during periods of rapidly changing events. This PIO would have access to up-to-the-minute information via Web EOC software. Additional PIO staff will work in the staff area directly behind the situation room.

While on duty at the EOC, all CCO personnel and PIO staff will complete activity logs per OES policy.

Before leaving the EOC at the end of shift, hard-copy notes of the shift's events that are not included on the Web site chronology should be printed and attached to a designated clipboard. The notes should contain significant press inquiries, FAQ's from rumor control, notations of who spoke during media briefings and their talking points, any issues of particular import for the speakers, relevant phone numbers or any information that will be helpful in bringing the relief PIO up to speed. These notes should be made contemporaneously during the shift.

Copies of any press releases issued are to be kept on the JIC Board posted in chronological order and each release is numbered. Releases can also be found on the Emergency Web site and Web EOC.

Press Releases and News Conferences

CCO will advise the CAO and EOC Director on the frequency and content of media briefings/press conferences.

The PIO will ensure that notes for all speakers at a news conference are comprehensive and non-duplicative, and may have to coordinate elected officials' talking points too. Speaking notes will be approved by the Director or Assistant Director.

Speaking points for non-elected County executive staff may be prepared by the subject-matter expert staff, such as the Public Health Officer, the Medical Examiner, or managers from the Departments of Environmental Health, Animal Services, Air Quality, or others. Sometimes it will fall to the PIO on duty or OES PIO at the EOC to prepare these bullets.

PIO staff will coordinate with the Chair's staff on speaking points when he or she is participating in an EOC news conference.

PIO's at the EOC will edit and distribute news releases written by County subject matter experts and help keep the County executive staff, CCO Director and Assistant Director current on breaking news.

During an emergency, many press releases can be issued in one day. Releases during an emergency should bear the date and time of the release.

Releases must be approved by Director or Assistant Director. In the absence of the CCO Director or Assistant Director approval should be sought by the ranking CAO staff (CAO, ACAO, DCAO, CAO Chief of Staff, etc.)

Media Monitoring

CCO staff will monitor local media including websites, television, newspapers, radio news shows, blogs and social media sites and 2-1-1 San Diego.

Rumor Control

If misinformation is noted in media broadcast, print or Web, it should be reported to the Director or Assistant Director who will decide whether to seek a correction. If neither is available, the PIO will seek input from the ranking representative of the CAO.

Web site

Web support technicians from the County IT provider are dispatched automatically to the EOC when the EOC is activated. The technician reports to the Director or Assistant Director upon arrival. An on-call CTO person may be required as well.

The CCO Emergency Web Editor will put updated information onto the emergency website, including news releases, and will work with County IT provider to ensure that the emergency page can be linked from the County homepage. The Editor will also check to make sure links to other agencies are working correctly.

The Emergency Web Editors will also manage the chronological log of events for the Web site.

He or she will keep track of significant events and get the information posted on the site.

The Emergency Web Editor will get approval for information/news releases from the CCO team before posting to the site.

Public Inquiry

CCO and PIO staff will not handle calls from the general public, but will help provide information to 2-1-1 San Diego. Much of what the 2-1-1 San Diego will need, however should be posted on the Web site.

The 2-1-1 liaison who is assigned to work in the JIC with the CCO team, will work with the volunteers who are answering the County hotline to find out which questions are most frequently asked and attempt to get those answers on the Emergency Web site. The volunteers who answer the County hotline will use the Emergency Web site as a reference, as will the media and public. (Marisa – what is the County hotline? Is it something at 211? I don't know of any other County hotline like this.)

Spanish-language Media

CCO recognizes that it is desirable to provide on-camera interviews to the Spanish-language media in Spanish and will recruit Spanish-speaking PIOs when necessary.

Continuous Improvement

The CCO will participate in drills, both in conjunction with the County's Office of Emergency Services and on its own. The Department's performance will be evaluated following drills in order to continuously improve and hone its emergency communications plan. Many new ways of communicating are developing rapidly, including using various social media sites, video and interactive maps. CCO intends to be flexible to utilize all methods and tools of communicating with the public and the media during an emergency.

ATTACHMENT I

County of San Diego County Communications Office
Social Media Policy for PIOs/County Employees
During an Emergency/Disaster

Social Media Policy for County PIOs/County Employees during an emergency/disaster upon activation of EOC

All County PIOs are required to get permission from someone with the County Media Team at the JIC, (located in the EOC) before using all social media (i.e. Facebook or Twitter) for any emergency message. The County must coordinate its message and speak with one voice to ensure consistency and credibility.

All County employees should use caution when using all social media during an emergency to communicate with the public and/or media. Communicating with the public and/or media could have unintended consequences and/or liability which could interfere with the County Media Team's ability to ensure accurate and consistent information is received by the media and the public.

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX M

Behavioral Health Operations

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX M

Behavioral Health Operations

ACKNOWLEDGEMENTS

San Diego County Health & Human Services Agency (HHSA)

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Jennifer Schaffer, HHSA, Behavioral Health Deputy Director
Marshall Lewis, M.D., HHSA, Behavioral Health Clinical Director
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Susan Bower, HHSA, Alcohol & Drug Deputy Director
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San Diego County Office of Emergency Services

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ANNEX M
BEHAVIORAL HEALTH OPERATIONS

I. General

Goals and Strategies

The Behavioral Health Annex to the San Diego County Operational Area Emergency Plan describes the basic concepts, policies, and procedures for providing a coordinated behavioral health response to any disaster. This Annex serves as the unifying behavioral health document for the County of San Diego and the cities of the County, as authorized by the Emergency Services Agreement.

Purpose

To establish a disaster behavioral health response system and define responsibilities and actions required ensuring an efficient and effective use of behavioral health resources during a disaster.

Plan Activation and Termination

Activation and termination of this Annex shall be by the direction of: (1) the County's Chief Administrative Officer (CAO) in that capacity, or as Area Coordinator of the Unified San Diego County Emergency Services Organization; or (2) a designated Assistant CAO; or (3) the Director, Office of Emergency Services or designated representative; or (4) the Directors, Behavioral Health Services or designated representative. Upon activation, the Deputy Director, Behavioral Health Services, will determine the extent of behavioral health services needed for the disaster and notify the appropriate parties. The overall goal of the Behavioral Health Annex is to minimize:

- Loss of life
- Human suffering
- Emotional aftermath
- Subsequent disability

by ensuring timely and coordinated behavioral health assistance in time of emergency.

The strategies to accomplish this goal are to:

1. Coordinate the utilization of behavioral health facilities and the procurement, allocation, and distribution of behavioral health personnel, supplies, and other resources.
2. Develop a system for County, Administrative Services Organization (ASO), and contracted behavioral health staff to provide emergency behavioral health intervention services for disaster victims, emergency response personnel and the community in general.

3. Provide a system for receiving and disseminating behavioral health information necessary for effective response to and recovery from a major disaster.

Disaster Response Levels

There are three (3) levels of disaster response. For the purpose of this annex, a behavioral health disaster applies primarily to a major emergency situation or potential crisis situation creating sufficient casualties or victims to necessitate a reorganization of day-to-day behavioral health operations, which includes three levels of emergency response.

Disaster Levels	Examples
Level 1	Local suicide(s), celebrity suicide, unusual acts of violence with extensive media coverage.
Level 2	Local mass shooting, local airplane crash.
Level 3	Natural disaster such as an earthquake or terrorist incident with national coverage.

The Behavioral Health Disaster Response is based on the nature and severity of the situation and the availability of resources.

II. Organization

The Office of Emergency Services (OES) is key to successful response and recovery operations. With centralized decision making, personnel and other resources can be more effectively utilized. The EOC Director insures all tasks are accomplished with little or no duplication of effort and with highest probability of success.

City Emergency Operations Center (EOC)

Each city has a central facility designated as an EOC. From the EOC, disaster operations are directed or coordinated. When EOC is activated, it is staffed by city employees from departments with emergency responsibilities, as well as liaison representatives from other agencies and jurisdictions. In each city, the Mayor, City Manager or their designee is designated as Director of Emergency Services, by ordinance, and directs or delegate emergency operations from the EOC.

Operational Area Emergency Operations Center (EOC)

The County EOC serves as the Operational Area (EOC). The Operational Area EOC serves the same function as the City's EOC. The EOC (for the unincorporated areas) has the additional responsibilities of coordinating response activities throughout the entire Operational Area. The Chief Administrative Officer (CAO) serves as the Director of the Emergency Services for the unincorporated areas and as Coordinator of Emergency Services for the entire Operational Area.

The Operational Area EOC is located at the County Operations Center in Kearny Mesa and is used as the central point for resource acquisition and allocation, as well as coordination. The Behavioral Health Section of the OA EOC (Attachment 1) is normally activated when the EOC is fully activated. It is staffed by pre-designated behavioral health personnel who coordinate, plan and evaluate the behavioral health response for the Operational Area. The EOC behavioral health staff serves as advisors to the CAO and makes decisions about resource allocation and priorities, and other behavioral health matters.

Director of Emergency Services – directs, or coordinates, the Emergency Services Organization and the emergency management program.

Director, Health and Human Services – reports to the CAO and is responsible for the overall management of all disaster health services to include Emergency Medical Services, Public Health Services, Environmental Health Services, and Behavioral Health Services.

The County of San Diego Behavioral Health Services Director – reports to the Director, HHSA and is responsible for all long-range logistics planning and policy decisions for behavioral health services within the County.

San Diego County Behavioral Health Services (SDBHS) Disaster Coordinator – reports to the Deputy Director, Behavioral Health Services and is primarily responsible for coordinating the provision of behavioral health services in the County. The Coordinator and designated administrative staff determine the need for behavioral health services and coordinate resource allocation. Additionally, the Coordinator works closely with medical, health, care and shelter operations, the ASO, other counties, community organizations and volunteers to coordinate activities.

HHSA Departmental Operations Center (DOC)

The Standardized Emergency Management System (SEMS) dictates the establishment of an Operational Area for response to an emergency situation. The Operation Area is considered the area that encompasses the unincorporated areas of San Diego County and the 18 incorporated cities. For all health related issues the County of San Diego, Health and Human Services Agency, Public Health Services is the lead agency within this Operational Area. The County Public Health Officer will make Operational Area public health decisions.

Once the magnitude of the crisis warrants, the Public Health Officer or Director of Emergency Services may request the activation of the County Emergency Operations Center (EOC) or the Departmental Operations Center (DOC) through the County Office of Emergency Services (OES), Duty Officer. The Emergency Medical Services (EMS) Duty Officer or EOC staff may activate the Multi-Casualty Plan, Annex D, of the County Emergency Services Organization Operational Area Emergency Plan (County Emergency Plan). Depending on the scope of the event, potential responders may include local, state and/or federal emergency/disaster, public health, law enforcement and health agencies.

Upon request by the EOC, staff at the HHSA DOC can assist with support needed for a variety of public health functions in an emergency situation. The DOC also handles supply/resource

availability, tracking and mutual aid request. The EOC representatives shall relay information regarding availability of resources to EOC Management.

III. Roles And Responsibilities

Behavioral Health Services (Directors or Designee)

1. Responsible for updating this Behavioral Health Annex and other emergency behavioral health plans and procedures, as needed.
2. Coordinates, plans and evaluates disaster behavioral health operations within the County.
3. Coordinates the procurement and allocation of behavioral health resources required to support disaster operations.
4. Develops and maintains a capability for identifying behavioral health resources within the County.
5. Coordinates all County-operated and contracted behavioral health-related activities among other local and private response agencies or groups, as well as state and federal agencies.
6. Coordinates requests and responses to requests with State Office of Emergency Services (OES) Region VI Disaster Medical Coordinator via County Emergency Medical Services (EMS).
7. Report to the EOC or send representative.
8. Designate behavioral health disaster coordinator.
9. Coordinates with jurisdiction PIO for the issuance of appropriate behavioral health messages.

Behavioral Health Executive Team (Directors, Assistant Deputy Directors, Hospital Administrator, Clinical Director)

1. Upon notification that a disaster has occurred, the disaster coordinator and disaster response leads meet with behavioral health director to plan appropriate next steps.
2. Clinical Director advises and consults on clinical issues related to the disaster.

County of San Diego, Behavioral Health Services, Disaster Coordinator

1. Responsible under the authority of the Director, Behavioral Health Services, for the overall coordination and implementation of this Annex.
2. Coordinates behavioral health related activities among local public and private response agencies or groups with designated administrative staff.
3. Establishes pre-disaster response linkages with other agencies such as American

Red Cross (ARC), law enforcement, law enforcement crisis counseling staff, fire departments, Voluntary Organizations Active in Disasters (VOAD), Psychological and Psychiatric Associations, and other community partners including members of the Health Care Association.

A. Inform them of County of San Diego, Behavioral Health Operations Disaster Annex.

B. Disseminate printed information on psychological effects and management of disaster.

C. Participate in disaster exercises.

D. Inform community that spontaneous volunteers will be processed through the Volunteer San Diego spontaneous processing center in a large event.

E. Work with Medical Reserve Corps to register licensed Behavioral Health Workers, if requested.

4. Works with the ASO and 211 San Diego to assure emergency referral service lines are sufficiently staffed to support disaster behavioral health operations.
5. Develops and maintains an inventory of all available trained staff and supplies.
6. Develops a network of behavioral health workers to include County staff and staff from other agencies, and private practitioners. These behavioral health workers will work with behavioral health staff in planning and providing behavioral health outreach services during and after a disaster in the field or in mass care shelters. Creates and maintains roster of Behavioral Health personnel.
7. Develops and coordinates disaster activities such as data collection for behavioral health disaster relief funding, outreach, and follow-up programs.
8. Assures briefings and debriefings of response team(s) occur.
9. Prepares Behavioral Health post-disaster summary report to include an evaluation of behavioral health activities and recommendations.
10. Maintains list of County Behavioral Health alternate work sites.
11. Maintains linkage with the State Department of Mental Health, Disaster Coordinator.
12. Establishes a field response, if requested.
13. Provides staff to an assistance center if requested.
14. Arranges for support during next of kin notification, if requested.

Behavioral Health Services, Disaster Response Team and Site Leads.

BHS will provide BHS Disaster Response Team comprised of County and contracted staff who have been trained in disaster response. Team membership may fluctuate due to staff availability. In addition, a Site Lead will be established at each Local Assistance Center or other County-designated assistance site. Site leads will manage set up and organization of the counseling services area, provide site-specific supervision of the BHS disaster response team, and facilitate essential communications. Other responsibilities for Site Leads include:

- Provide on-site orientation and oversight of BHS disaster response team members assigned to assist in disaster response and recovery
- Manage required site statistics
- Liaise with Assistance Center Manager and managers of other services
- Facilitate communication between LAC and BHS Administration
- Provide daily briefings to BHS Disaster Coordinator and the on-site BHS disaster response team members
- Assure protocols are being followed
- Make recommendations for alterations in service provision as needed

Note: Counseling services for First Responders are frequently available through each responder's organization. BHS counseling and referral services may also be accessed via a request to OES.

Administrative Services Organization (ASO) Telephone Access and Crisis Line (24-7 hour 365-day access and crisis intervention services)

1. Provides emergency telephone counseling and referral to disaster victims seeking psychological services. The ASO to provide feedback information to the Disaster Coordinator, Behavioral Health Services, as appropriate, including the number of calls, type of calls received and trends.
2. Acts as an entry point to the behavioral health system for persons seeking help.
3. Reports identified needs in the community for additional disaster-related services, to the SDBHS Disaster Coordinator. Advise the County of San Diego, Behavioral Health Services of critical events.
4. The ASO and 24-hour Access & Crisis Line to provide alert information to the Disaster Coordinator, Behavioral Health Services, as appropriate.
5. Works with BHS Disaster Coordinator to identify ASO staff to assist with disaster response as needed.
6. Works with BHS Disaster Coordinator to identify individual practitioners as needed.

All County of San Diego, Behavioral Health Services Programs

1. Prepare Standard Operating Procedures (SOPs) and functional checklists for behavioral health response to a disaster, including a system for automatic reporting of pre-designated personnel to assigned disaster posts.
2. Train personnel and alternates.
3. Maintain accurate and complete records of all disaster related activities concerning personnel timekeeping, mission tasking and resource expenditures during the period of any incident that may become eligible for future reimbursement.

Hospital Administrator - San Diego County Psychiatric Hospital

1. Activates hospital disaster plans.
2. Keeps the SDBHS Disaster Coordinator informed of the general status of San Diego County Psychiatric Hospital and resource needs.
3. As able, contributes available staff and resources to meet the larger behavioral health needs in the community.

The County of San Diego, Behavioral Health Services Staff

1. Under California Government Code, Title I, Section 3100, all government employees are Disaster Service Workers who can be called upon in an emergency: “All public employees are hereby declared to be Disaster Service Workers subject to such disaster service activities as may be assigned to them by their superiors or by law.”
2. Be familiar with the contents of this Annex.
3. Possess a valid County Identification Card, professional license, and other preparedness items as necessary.
4. See to the safety of themselves and their families in a disaster and then be prepared to fulfill their responsibility to the County.
5. Be available for callback. Monitor television and radio stations to keep informed of the situation.
6. Use discretion in reporting to regular work-stations (i.e., road damage, other impending hazards).

IV. Functions

Behavioral Health Programs Response

There are a variety of Behavioral Health facilities. During a disaster, the facility management takes the following types of actions:

1. Activates facility/program disaster plan.
2. Assesses the degree of damage to the facility.
3. Determines staffing needs and implements call-back procedures, if necessary.
4. Establishes a communication link between the facility and the Behavioral Health Disaster Coordinator.
5. If necessary, reorganizes program operations to support County response.

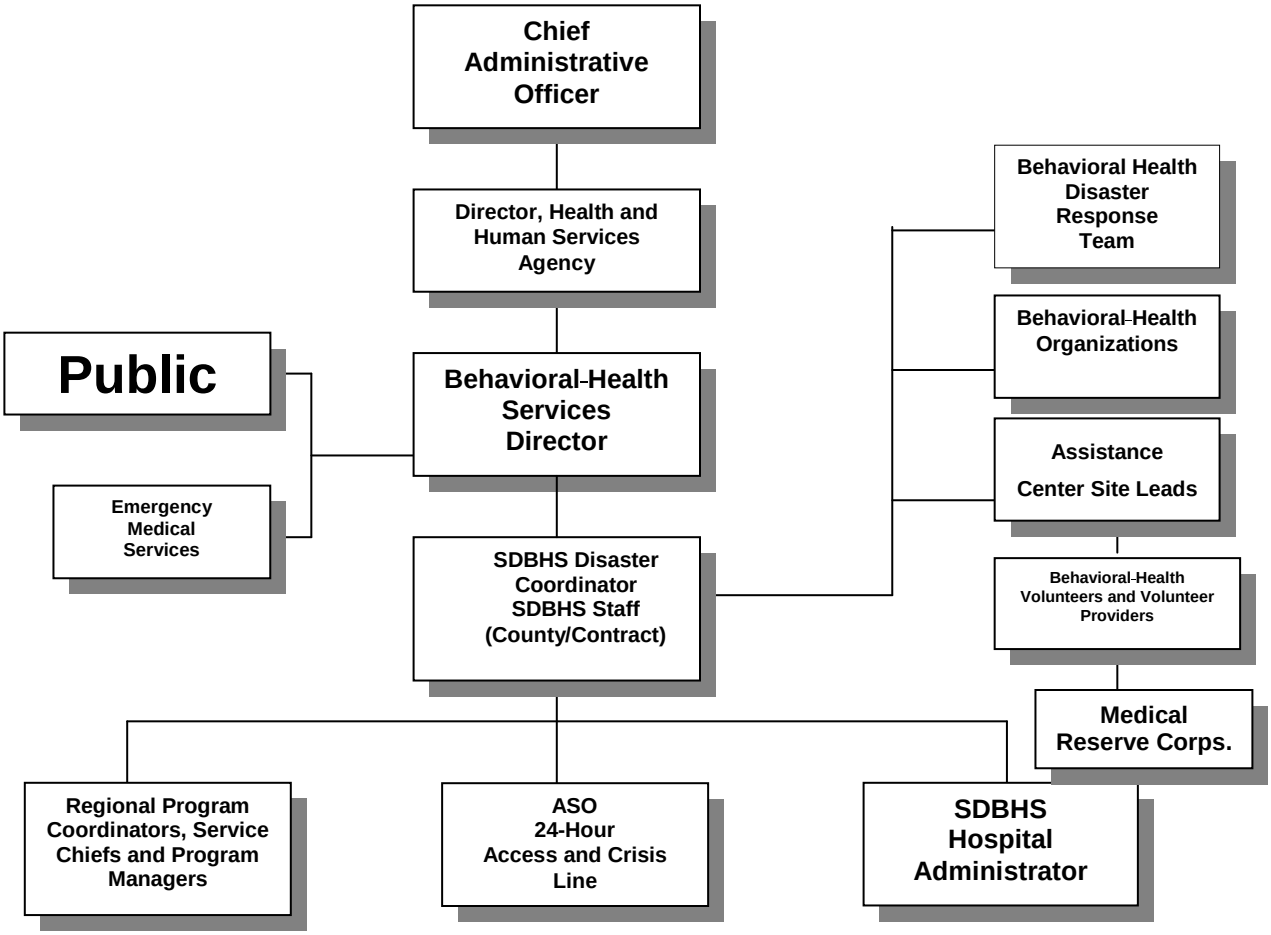
Information and Education

Dissemination of information and education in the aftermath of a disaster with victims, emergency responders, and the community at large is accomplished in three ways:

1. Disaster Coordinator working with administrative leads and media staff assures the broadcasting of information about the immediate availability of behavioral health services using PSAs (Public Service Announcements) and other available resources.
2. SDBHS will cooperate with the OES and the Disaster Media Team to get public service messages to the media concerning the types of behavioral health services available and the location of these services as well as educational information to help victims.
3. Disaster Coordinator working with administrative leads assures the establishment of an “information line” available for people to inquire about what specific behavioral health services are available and other details.
4. The Emergency Alert System (EAS), radio, television, newspapers and the Internet are mechanisms by which disaster information is disseminated to the public. Posters, flyers, and other printed messages can also be used at disaster sites, emergency shelters and facilities.
5. Behavioral Health Services will help staff crisis phones, when necessary.

Attachment 1

Behavioral Health Disaster Operations



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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX O

Animal Services

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX O

Animal Services

ACKNOWLEDGEMENTS

Animal Control Task Force

County of San Diego Department of Animal Services
San Diego Humane Society and S.P.C.A
Escondido Humane Society
Coronado Animal Shelter
El Cajon Animal Control
County Veterinarian
La Mesa Animal Control
Department of Fish and Game
Rancho Coastal Humane Society
Helen Woodward Animal Care Center
Chula Vista Animal Care Facility
Veterinary Medical Association

Operational Area Plan Review Committee

Deputy Chief Dismas Abelman, Solana Beach Fire Department
Donna Faller, Program Manager, City of San Diego Office of Homeland Security
Scott Hansen, Emergency Preparedness Coordinator, San Marcos Fire Department
Joe Urban, Emergency Preparedness Coordinator, Oceanside Fire Department
Chief Dave Hanneman, Chula Vista Fire Department
Deputy Chief Richard Mattick, Santee Fire Department

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San Diego County Office of Emergency Services

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ANNEX O
ANIMAL SERVICES

I. General

The San Diego Operational Area Emergency Plan Animal Services Annex describes the basic concepts, policies, and procedures for providing a coordinated animal control response to any disaster. This Annex serves as the unifying document for the emergency plans of the County, Cities, and animal care and control agencies. The Animal Control Mutual Aid Agreement, among and between the County of San Diego and the Cities in the County, provides for an Operational Area-wide animal control program.

Purpose

To establish organizational responsibilities and general policies and procedures for the care and control of animals during natural and man-made disasters.

Goals and Objectives

The overall goals of animal control operations are:

1. Protect the health and safety of the community.
2. Provide for the immediate care, control, and safety of animals.
3. Minimize animal suffering, loss of life, and potential disability by ensuring a timely and coordinated assistance.
4. Provide for the care of animals brought to shelters or housed at staging areas and evacuation sites.
5. Provide a system for returning animals to their owners after the event.

The objectives of this Annex are:

1. Describe the animal control response system to implement this Annex, concept of operations, and organization.
2. Establish procedures for activating and deactivating this Annex.
3. Provide for the management of animal control services, facilities, activities, and resources.
4. Provide a framework on which the County, cities, and other supporting agencies can develop support plans and standard operating procedures.

Concept of Operations

For the purposes of this Annex, an animal services disaster applies primarily to a major situation or potential situation, creating sufficient animal-related problems to exceed the capabilities of

the local animal control agency.

Activation

The activation of this Annex shall be at the request of the local animal control agency and initiated by the Director of the County of San Diego Department of Animal Services or designee.

Termination

Termination of this annex shall take place after the announcement to secure from the disaster situation and normal phase-down and deactivation operations have been completed, and the local animal control agency indicates no further need for this Annex to be activated.

II. Organization

The operations described in this Annex address all levels of disaster management from the scene to shelters. The plan provides a network of all agencies involved in animal control and care, and their respective roles, for an effective animal control system.

At the Scene

At the scene, the responsibility for animal care and control belongs to the respective animal control agency for the affected area of the County. As the incident overwhelms the initial responding animal control agency, that agency would expand operational procedures and activate the Annex.

EOC

City EOCs

Each city has a central facility designated as an Emergency Operations Center (EOC). From the EOC, disaster operations are directed or coordinated. It is activated when a disaster occurs and is staffed by city employees with emergency responsibilities, as well as liaison representatives from other agencies and jurisdictions. City plans may call for an animal control representative to be present when the EOC is activated. In each city, the city manager is designated as Director of Emergency Services, by ordinance, and directs emergency operations from the EOC.

Operational Area/County EOC

The Operational Area/County EOC serves the same function as the City EOCs with the Chief Administrative Officer serving as Director of Emergency Services for the unincorporated areas of the County, and Coordinator of Emergency Services for the Operational Area.

The Animal Services section of the EOC is normally activated when the EOC is fully activated. It is staffed by a representative of the County of San Diego Department of Animal Services, who will make decisions about resource allocation, priorities, and will coordinate the animal control response for the County.

Chief Administrative Officer (CAO) – directs or coordinates, the Emergency Services Organization and the Emergency Management Program. In a major emergency or disaster located entirely within the County unincorporated area, the CAO directs emergency operations. In a disaster involving more than one jurisdiction, the CAO serves as the Coordinator of emergency operations.

Director, County Department of Animal Services (or designee) – reports to the CAO and is responsible for directing emergency animal control operations within the unincorporated area of the County and contract cities, and is responsible for coordinating emergency operations if one or more jurisdictions are involved. Additionally, the Director of the Department of Animal Services, or designee, maintains active liaison with fire, law enforcement, other animal control agencies, and public and private shelter representatives.

III. Roles And Responsibilities

All Affected Agencies

1. Prepare and Maintain Standard Operating Procedures (SOPs) and functional checklists for animal control response to a disaster or emergency, including a system for automatic reporting of pre-designated personnel to assigned disaster posts.
2. Train personnel and alternates.
3. Maintain an active liaison with the County of San Diego Department of Animal Services.

County of San Diego Department of Animal Services (DAS)

1. Maintain, and exercise the Animal Services Annex.
2. Maintain a system to identify and track animals received during a disaster.
3. Maintain criteria establishing County-wide holding time and euthanasia standards for implementation during a disaster.
4. Maintain and update [M8]the Animal Services Annex and Mutual Aid Agreement.
5. Direct disaster animal control operations within the unincorporated areas of the County of San Diego, and its contract cities.
6. Coordinate the procurement and allocation of resources requested by cities to support disaster animal control operations.
7. Assist with the coordination of training and plan development exercises with other animal related agencies.
8. Respond to requests for aid to other regions.
9. Assist in the development of a resource directory for animal control.
10. Maintain liaison with the coordinators of other emergency functions such as fire and rescue, law enforcement, health, and care and shelter.

11. Maintain liaison with the Red Cross, volunteer agencies, and other representatives within the County. Provide staffing to assist with animal related issues within these groups.
12. Coordinate the transportation of animals to animal care facilities within its jurisdiction and to other areas as requested.

San Diego Humane Society and Society for Prevention of Cruelty to Animals) (SDHS)

1. Assist in recovery and rescue of animals.
2. Coordinate recovery and rescue with Animal Rescue Reserves (ARR) and the DAS.
3. May provide available resources, such as temporary corrals for large animals.
4. Assist with the coordination of training and plan development exercises with other animal related agencies.
5. Maintain an active liaison to DAS
6. Maintain an active liaison with the Law Enforcement Mounted Units of the El Cajon Police Department, San Diego Sheriff's Department, and United States Border Patrol [M10]

Public Animal Control Agencies

1. Direct disaster operations within their jurisdictions.
2. Coordinate the transportation of animals to animal care facilities within their jurisdiction.
3. Request and respond to requests for mutual aid within the County.
4. Maintain liaison with the coordinators of other emergency functions such as fire and rescue, law enforcement, health, and care and shelter.
5. Maintain liaison with volunteer agencies within the County.
6. Maintain liaison with the DAS.

Law Enforcement Mounted Units

1. Assist with coordinating mutual aid when local resources are exhausted.
2. Provide available resources as resources become available.
3. Assist in recovery and rescue of animals.
4. Provide liaison to the DAS and San Diego Humane Society and SPCA.

Non-Government Organizations (NGO's)

1. Assist with coordinating mutual aid when local resources are exhausted.
2. Provide available resources as resources become available.
3. Assist in recovery and rescue of animals.
4. Provide liaison to the DAS.

Private Animal Care Shelters

1. Provide care for animals.
2. Assist in sheltering of animals.
3. May provide available resources.
4. Provide liaison to the DAS.

Veterinary Medical Association

1. Coordinate provision of emergency shelters for animals, as available.
2. Coordinate private veterinary medical services to provide triage and necessary medical care for the animals rescued.
3. Provide liaison to the DAS.

Zoological Society

1. Provide expertise and resources to handle and care for exotic animals.
2. Request, and respond to requests for assistance.

State Fish and Game and Other Wildlife Organizations

1. Provide assistance with wildlife.
2. Provide liaison to the DAS.

Office of Emergency Services (OES)

1. Provide liaison to the DAS.
2. Assist in obtaining necessary resources.
3. Assist with communications, as necessary.

American Red Cross (ARC)

1. Provide liaison to the DAS.
2. Assist the DAS with coordinating and providing care and management of animals brought to Red Cross Mass Care Shelters.

IV. Functions

Notification

Alert - Standby Mode - When a jurisdiction has information indicating that this Annex may need to be activated, that jurisdiction will contact the County of San Diego Department of Animal Services (DAS). It is not necessary to make a commitment of resources at this time; however, it is the time to start planning and preparing an appropriate response.

Activate - When the need to activate this Annex is confirmed, the affected jurisdiction will notify their law enforcement agency, and they will contact the County of San Diego Department of Animal Services. Pertinent information such as the nature of the emergency, the location, the type of animals involved, and the anticipated number of animals should be provided. The DAS will make the following notifications:

A. Notify the closest County of San Diego Animal Services unit to respond to the scene and report directly to the animal control authority on scene, or law enforcement representative, to provide direct communications between the scene and the DAS.

B. Notify animal shelters in the area of the incident.

C. Notify all other agencies as needed, which may include:

1. San Diego Humane Society & SPCA and Animal Rescue Reserve
2. Other Public Animal Control Agencies
3. Law Enforcement Mounted Units
4. Non-Government Organizations
5. Private Animal Care Shelters
6. Veterinary Medical Association
7. Zoological Society
8. State Fish and Game
9. Office of Emergency Services
10. American Red Cross
11. Humane Society of the United States

Communications

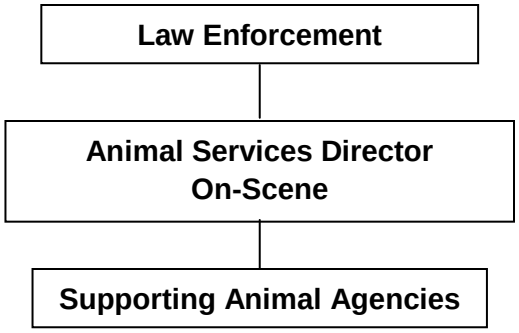
There may be common radio frequencies or talk-groups on the 800 MHz radio system for use by animal control agencies. For example, there is a radio channel for communications between the DAS and the SDHS. The Regional Communications System (RCS) has several mutual aid talk-groups, which could be used if the agencies are all on the 800 MHz system.

The County of San Diego Department of Animal Services has the responsibility of providing

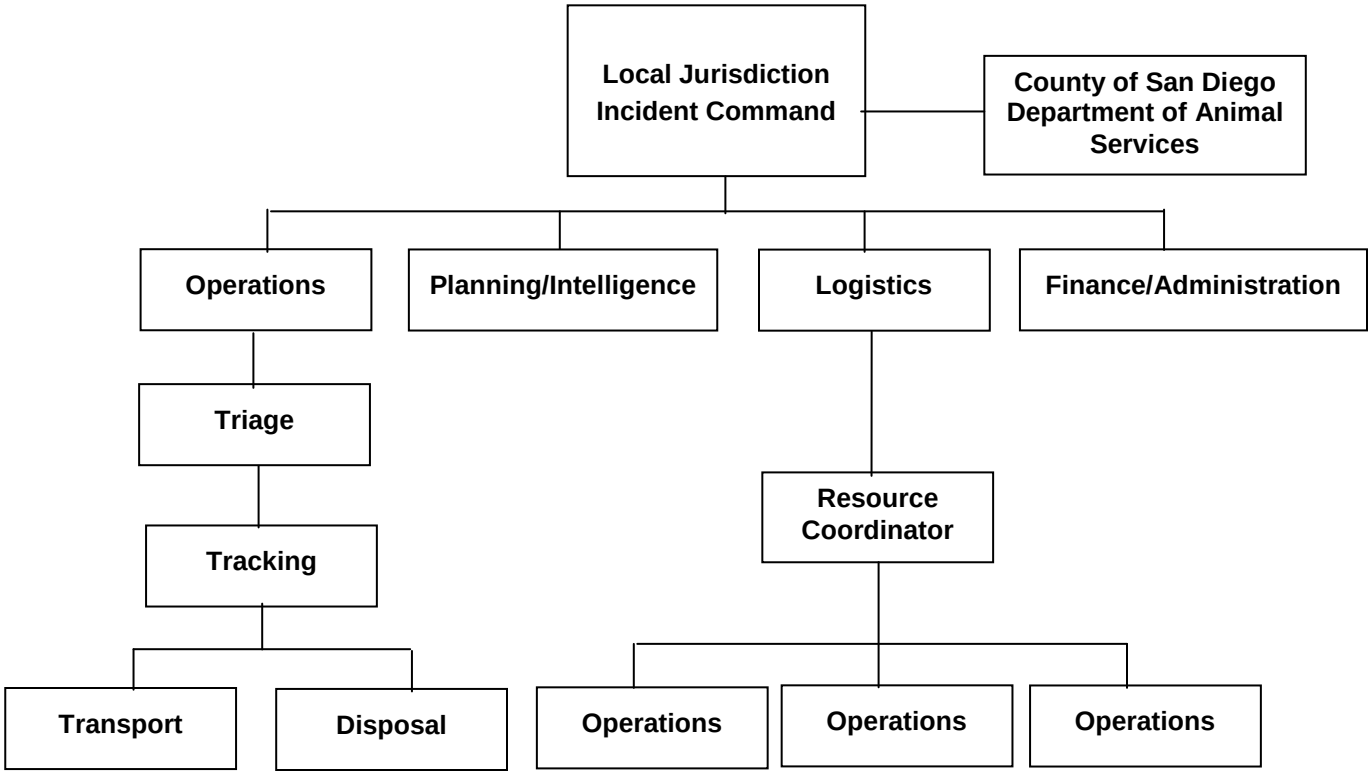
communications capability to the animal control authority on scene. Once the DAS has been notified of the need to activate this Annex, an Animal Control Officer from the DAS will be dispatched directly to the scene so that the officer's vehicle radio can be used to speak to the DAS Communications Center.

Incident Command

OVERALL COMMAND STRUCTURE



ORGANIZATIONAL STRUCTURE WITHIN AN INCIDENT



Triage

Triage is the process of sorting animals for emergency care, euthanasia, transportation, impoundment and disposal. The DAS veterinary or their designee has overall responsibility of coordinating triage management.

1. Primary triage is the first sorting of animals in the field to determine which animals are evacuated to secondary triage areas.
2. Secondary triage is the second phase of sorting animals, and is performed in the triage treatment area. At this time, an animal's primary triage category may change. Stabilizing treatment may be initiated while awaiting transportation; however, transport should not be delayed for treatment.
3. When euthanasia is deemed necessary by the DAS veterinary staff or designee, the animal will be promptly euthanized.

Transportation

The coordination of transportation from the scene to operational animal facilities is the responsibility of the Local Jurisdiction Incident Command.

The Coordinator will assess the situation and determine the type and number of the transportation vehicles needed. This information will be relayed by the Local Jurisdiction Incident Command to the County of San Diego Department of Animal Services Dispatch Center.

The DAS Dispatch Center will:

1. Contact the closest providers,
2. Assist the duty Lieutenant or designee with arrangements for transportation, and
3. Advise the Coordinator of estimated time of arrival, and relay other essential information.

Medical Treatment

Animal control agencies will coordinate the emergency treatment of animals within their care and jurisdiction and provide continued medical care through the event.

Sheltering of Animals at Human Mass Care Shelters

Mass Care Shelters

The American Red Cross or the shelter management personnel will be contacted by the County of San Diego Department of Animal Services or the City animal control agency within three hours after the opening of the facility. The DAS will advise and assist the manager in handling and caring for animals at the shelter until transportation can be arranged.

All animals will be picked up in the field, collected, and transported to shelters (which will be

determined at the time of the incident). These animals will be tracked and cared for until picked up by their owners or until other arrangements have been made. As an alternative, the DAS may provide temporary enclosures for those animals whose owners are present and willing to take full responsibility for their animals while at the Mass Care Shelter. The DAS will assist with providing food and water for the animals as needed.

Care of Animals Left in Evacuated Areas

The DAS and the local animal control agency will coordinate for the care and feeding of any animals left within the evacuated areas.

Dead Animals

In order to reduce the chance of the spread of disease and protect the public health, it is essential that local jurisdictions be responsible for coordinating the pick up and removal of dead animals.

APPENDIX O-1

ANIMAL SERVICES ANNEX EMERGENCY ACTION CHECKLIST
RESPONSE TO A MAJOR EARTHQUAKE

Action	Responsibility
Determine condition and capacity of shelters; request shelters to activate Disaster Plans.	DAS (Department of Animal Services)
Determine availability and condition of animal supplies; take appropriate action to maintain inventories or resupply.	All Agencies

IF THERE ARE ONLY A FEW OR NO PUBLIC OR CITIZEN CASUALTIES, PREPARE TO SUPPORT MORE HEAVILY DAMAGED JURISDICTIONS.

IF THERE IS EXTENSIVE DAMAGE AND A LARGE NUMBER OF CASUALTIES IN THE PUBLIC SECTOR, TAKE THE FOLLOWING ACTIONS AS APPROPRIATE.

Assign Animal Services liaison to Emergency Operation Center (EOC), if activated.	DAS
Take action to expand shelter capacity.	All Shelters
Augment personnel.	All Agencies
Obtain emergency supplies and specialized equipment.	All Shelters
Activate plans to obtain supplementary services such as public information, records, reports, etc.	DAS
Activate plan to impound animals.	Each Animal Control Agency
Inform the Emergency Public Information Officer of current information for dissemination to the public.	All Affected Agencies
Provide Field medical care, including Triage, near or in affected areas.	All Responding Agencies
Determine number and location of animals that require hospitalization.	Incident Command
Determine transportation needs and capabilities.	Incident Command
Have units dispatched to pick up injured animals.	Incident Command/DAS

Assign animals to shelters to maximize use of our facilities.	Incident Command
Determine availability and location of Animal Control personnel.	Incident Command/DAS
Assign personnel to shelter facilities as required.	Each Animal Control Agency
Request assistance from Regional or Cal EMA through OES.	Incident Command/DAS
Obtain State mutual aid and resources.	OES
Inventory and determine need for euthanasia and vet supplies.	Incident Command/DAS
Periodically poll Red Cross Shelters for animal care needs.	Each Animal Control Agency
Notify DAS when shelter capacity is reached.	Each affected animal shelter
Store food and water for shelter facilities.	Each Animal Control Agency

APPENDIX O-2

EMERGENCY ACTION CHECKLIST
RESPONSE TO HAZARDOUS MATERIALS INCIDENT

Action	Responsibility
Assist with evacuation or shelter in place of potentially affected areas if appropriate.	Incident Command
Establish contact with the DAS. Assign Animal Services Liaison to Emergency Operational Center (EOC), if activated.	Incident Command
Determine need for and perform euthanasia.	Incident Command
Removal of animal bodies.	Incident Command/HazMat
Inform the Emergency Public Information Office of current information for public dissemination.	Incident Command/HazMat
Evaluation of animals for decontamination.	Incident Command/HazMat

APPENDIX O-3

EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FLOODING

Flooding Expected

Action	Responsibility
Identify animal care facilities subject to flooding and prepare to relocate animals.	Each Animal Control Agency
Designate facilities to handle the veterinary needs of flood victims.	Each Animal Control Agency
Store water and food for shelter facilities.	Each Shelter
Place Animal Control personnel on stand by status.	Each Animal Control Agency
Establish contact with the DAS. Assign Animal Services Liaison to Emergency Operational Center (EOC), if activated.	Incident Command
Plan for alternate communications.	DAS
Begin evacuation of animal control facilities, as necessary.	Incident Command
Coordinate animal evacuation with Law Enforcement Movement Coordinator.	Incident Command

Flooding Occurs

Evaluate flood-prone animal care facilities.	Each Facility
Initiate alternate communications, if needed.	DAS
Request assistance from Cal EMA.	Incident Command/ OES
Activate Animal Services Annex, as required.	Incident Command/ DAS

APPENDIX O-4

EMERGENCY ACTION SHECKLIST
RESPONSE TO IMMINENT/ACTUAL DAM FAILURE

Dam Failure Imminent

Action	Responsibility
Put Animal Control personnel on standby.	Each affected Animal Control Agency
Identify animal care facilities subject to inundation.	Each affected Animal Control Agency
Evacuate animals from facility, if necessary.	Each Animal Control Agency
Plan for alternate communications.	DAS
Establish contact with the DAS. Assign Animal Services liaison to Emergency Operation Center (EOC), if activated.	Incident Command
Coordinate animal evacuation with the Law Enforcement Coordinator.	Incident Command
Store water and food for shelter facilities.	Each Animal Control Agency

Dam Failure Occurs

Mobilize animal care personnel.	All Agencies
Evacuate Flood prone shelter facilities.	Each Animal Control Agency
Initiate alternate communications, if needed.	DAS
Request assistance from Cal EMA, as necessary.	Incident Command/OES

APPENDIX O-5

EMERGENCY ACTION CHECKLIST
RESPONSE TO IMMINENT/ACTUAL FIRE

Fire Imminent

Action	Responsibility
Identify animal care facilities that may be threatened, and prepare to relocate animals.	Each Animal Control Agency
Designate facilities to handle the veterinary needs of fire victims.	Each Animal Control Agency
Put Animal Control personnel on stand-by status.	Each Shelter
Establish contact with the DAS. Assign Animal Services liaison to Emergency Operation Center (EOC), if activated.	Incident Command
Plan for alternate communications.	DAS
Begin evacuations for animal facilities, as necessary.	Incident Command
Coordinate animal evacuation with Law Enforcement Movement Coordinator.	Incident Command
Notify the DAS when shelter capacity is reached.	Each affected Animal Shelter

Fire Occurs

Mobilize animal care personnel.	All Agencies
Evacuate fire-prone animal care facilities as needed	Each Facility
Initiate alternate communications, if needed.	Each Facility
Activate Animal Services Annex, as required.	Incident Command/ DAS
Request assistance from Cal EMA.	Incident Command/ OES

APPENDIX O-6

EMERGENCY ACTION CHECKLIST
RESPONSE TO OIL SPILL

Action	Responsibility
Identify facilities that can be used for the cleaning and treatment of birds and other affected wildlife.	DAS
Assist the California Department of Fish and Game, as requested.	DAS
Establish contact with the DAS. Assign Animal Services liaison to Emergency Operation Center (EOC), if activated.	Incident Command

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX P

Terrorism

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX P

Terrorism

ACKNOWLEDGEMENTS

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Operational Area Plan Review Committee

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Scott Hansen, Emergency Preparedness Coordinator, San Marcos Fire Department
Joe Urban, Emergency Preparedness Coordinator, Oceanside Fire Department
Chief Dave Hanneman, Chula Vista Fire Department
Deputy Chief Richard Mattick, Santee Fire Department

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San Diego County Office of Emergency Services

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ANNEX P
TERRORISM

I. General

The San Diego County Operational Area developed a Terrorist Incident Emergency Response Protocol which is intended for use by law enforcement and other first responder agencies. The Office of Emergency Services (OES) maintains this Protocol which is classified as "For Official Use Only."

The Terrorism Protocol describes the countywide collective initial actions that will be taken to prevent or mitigate the effects of a threatened or actual terrorist attack against any jurisdiction within the county. It does not replace the County's or any jurisdiction's emergency plans or procedures; rather, it augments existing documents to assist in coordinating the initial planning and response efforts.

The Protocol defines the command and control structures for responding to specific types of Weapons of Mass Destruction (WMD) attacks, provides the actions needed to respond to all phases of a terrorist attack, and identifies the critical response tasks and implementation steps necessary to mitigate an attack. The Protocol includes two appendices, Terrorism Response Matrix and Critical Task Implementation Steps that incorporate critical response tasks and implementation steps.

Scope

The Terrorism Protocol only addresses the coordination efforts expected of jurisdictions within the County of San Diego. It does not alter or supplant existing plans, Standard Operating Procedures (SOPs), roles and responsibilities listed under the National Incident Management System (NIMS), the San Diego Operational Area Emergency Plan, or the documents that direct the emergency actions of the individual jurisdictions. This Protocol is not intended to usurp the authority or prerogatives of local jurisdictions.

Readiness Condition Activities

The County OES has defined three phases of readiness conditions and a fourth phase of response actions that correlate with the Operational Area Emergency Plan and the Operational Area Emergency Operations Center activities and Standard Operating Procedures. The three readiness conditions are:

1. Preparedness
2. Increased Readiness
3. Alert

Response Actions

Response actions are the initial activities that occur for a terrorist attack within the county. These are used as a guide until the Incident Action Plan for the first operational period is developed and implemented.

Movement between readiness conditions may not be progressive as changing circumstances may require skipping to a more proactive readiness condition based on intelligence and actual events. Certain actions in the readiness conditions correlate to the Homeland Security Advisory System (HSAS) Conditions. Additionally, the above phases can cross HSAS condition boundaries. The decision to initiate activities for the County OES within any of these readiness conditions will be made by the Director, OES, or his/her designee in response to conditions or intelligence within the Operational Area, the region, state and/or the nation. The actions in the readiness/response phases and related activities are described in the Terrorism Protocol.

II. CONCEPT OF OPERATIONS

The Terrorist Incident Emergency Protocol addresses actions to be taken during a response to a terrorism event. Activities are described for the three readiness phases as well as the initial response phase.

Each phase is related to the Homeland Security Advisory Levels and has specific intelligence and warning indicators and triggers. Different actions are defined for county and city governments.

The Protocol contains a matrix that outlines the roles of the multitude of agencies involved in a response to a terrorist attack. This helps to ensure a coordinated response among the different disciplines and provides an understanding of their roles and how they relate to the other responding agencies.

The final portion of the Protocol lists those Critical Tasks identified by the Department of Homeland Security. The tasks address the host of functions necessary for readiness postures to terrorist threats and for the initial response to attacks. Functions include investigation, detection, identification, health/hazard assessments; monitoring, sampling and surveying operations; alert and mobilization of EOC staff; protective actions, emergency public information; etc. The Protocol provides a detailed breakdown of the steps required for each task/function.

Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX Q

Evacuation

October 2010

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Unified San Diego County Emergency Services Organization

ANNEX Q

Evacuation

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Annex Q
Evacuation

I. General

This San Diego County Operational Area (OA) Evacuation Annex is intended to be used as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. This Annex outlines strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the San Diego OA. In addition, this Annex provides general estimates on the number of residents within each jurisdiction of the OA that may potentially be impacted by specific hazards and need to evacuate, the number of residents that may require sheltering or transportation assistance, and the estimated number of pets that may need to be accommodated in an evacuation effort to assist in decision making processes. This Annex also provides hazard specific considerations, general evacuation transportation routes and capacities, countywide shelter capacities, resources available locally and through mutual aid, and special needs considerations.

The development of this Evacuation Annex was initiated through the establishment of an Evacuation Steering Committee, consisting of various jurisdictions, agencies, and disciplines in the OA. The Committee was instrumental in developing an Evacuation Planning Workshop that was conducted by San Diego County Office of Emergency Services (OES) on September 28th, 2006. Nearly 80 representatives from local, State, and Federal agencies, as well as those from OA jurisdictions attended and participated in this workshop. The purpose of the workshop was to determine the overall scope and assumptions of the OA Evacuation Annex, identify current and past evacuation planning efforts, identify evacuation planning needs, prioritize planning issues, and propose plan development recommendations.

To further define and evaluate strategies and considerations associated with this Annex, six Steering Committee meetings were conducted subsequent to the workshop, and the decisions, concepts, and strategies developed from these meetings are incorporated into this Annex.

This Evacuation Annex provides a framework for the County of San Diego to coordinate and respond to a Level II (moderate) evacuation scenario. For the purposes of this Annex, a Level II evacuation is defined as an evacuation effort that impacts two or more communities within the OA, where the evacuation distance between the impacted site and the “safe zone” generally does not exceed 30 miles, and the evacuation efforts generally do not extend beyond the OA boundaries. Although this Annex focuses on a Level II evacuation effort, additional considerations for a Level III (catastrophic) evacuation scenario are provided in Appendix A.

Command and Control

Any large-scale response to an incident, including those resulting in the evacuation of more than two impacted communities, will need to be coordinated through the OA Emergency Operations Center (EOC) operating under a Unified Command. The Coordinator of Emergency Services will coordinate the overall multi-jurisdictional evacuation effort and the OA Law Enforcement Coordinator will be responsible for coordinating OA-wide evacuation activities. This coordination

will be accomplished in the OA EOC with the involved jurisdictional EOCs and the Sheriff's Department Operations Center. Evacuation operations in the field will be conducted by law enforcement agencies, highway/road/street departments, and public and private transportation providers.

In addition, it is critical that jurisdictional EOCs coordinate evacuation efforts with the OA EOC to ensure potential conflicts are conciliated. This may involve phasing community evacuation efforts or the allocation of critical resources.

Communications

Inter-jurisdictional and inter-agency coordination will be conducted through the Incident Command Posts, OA EOC, San Diego County Medical Operations Center, jurisdictional EOCs and Department Operations Centers utilizing available communications equipment and infrastructure. Situational awareness will be supported through data-sharing systems such as WebEOC to expedite the transfer of information regarding the status of the incident. Activation, coordination, and use of the Joint Information Center will be initiated as soon as possible following an incident. The OA Joint Information Center will function to coordinate information to the media. All information released to the public regarding the incident will be cleared by Public Information Officers in the Joint Information Center. Real-time informational updates regarding evacuation routes, evacuation points, shelter capacities, and other essential information will be provided to evacuees en-route through emergency radio stations, 5-1-1 (Nationwide Travel Information), and Changeable Message Signs. All communication efforts will follow the protocols established under the San Diego Urban Area Tactical Interoperable Communications Plan and Annex I, Communications, of the Operational Area Emergency Plan.

Transportation

The primary mode of transportation that will be used during jurisdictional evacuation efforts will be privately owned automobiles. The OA will use available resources, Memorandums of Understanding and Agreement (MOUs/MOAs) with public and private transportation agencies, and mutual aid to procure, coordinate, and provide adequate means of transportation for those people that do not own or have access to automobiles, have disabilities which limit their transportation options, or have other special needs.

Primary evacuation routes consist of the major interstates, highways, and prime arterials within San Diego County. Local jurisdictions will work with the OA EOC, law enforcement officials, California Department of Transportation (Caltrans), California Highway Patrol (CHP), Public Works, and other applicable agencies/departments to identify evacuation points and transportation routes. In addition, transportation points will be identified to collect and transport people without transportation resources to evacuation points.

It is critical that modes of available transportation are identified that can help evacuate people with disabilities during an emergency. Transportation needs to be made available that can accommodate personnel in wheelchairs, scooters, or other mobility aids. Some potential options can be the use of lift-equipped school buses or vans. People that are blind or have poor vision will also need additional assistance because they can no longer rely on their traditional

orientation and navigation methods. Buses will most likely be the primary resources used to evacuate special needs populations. Each bus can accommodate two wheelchairs. It is also essential that local jurisdictions establish and maintain working relationships with public and private agencies that serve the transportation-dependent populations.

Sheltering Considerations

Local jurisdictions will work with law enforcement agencies to identify and establish evacuation points. These evacuation points will serve as temporary safe zones for evacuees and will provide basic needs such as food, water, and restrooms. Some evacuation points may be converted into shelter locations if necessary. Care and shelter operational procedures are outlined in Annex G of the Operational Area Emergency Plan.

All shelters should be Americans with Disabilities Act compliant throughout the facility to ensure persons with disabilities can access all amenities. All potential shelter sites should be assessed for parking, accessibility, and restroom accommodations to determine if these sites are complaint with the Americans with Disabilities Act.

Care and Protection of Animals

The Pets Evacuation and Transportation Standards Act of 2006 amends the Stafford Act, and requires evacuation plans to take into account the needs of individuals with household pets and service animals, prior to, during, and following a major disaster or emergency.

The San Diego County Department of Animal Services has plans in place to transport and shelter pets in a disaster under Annex O of the Operational Area Emergency Plan including the Animal Control Mutual Aid Agreement. Animal Control Officers, the San Diego Humane Society, and private animal care shelters will assist in the rescue, transport, and sheltering of small and large animals. MOUs need to be formalized with other agencies/organizations, especially for the transportation of large animals, such as horses. In addition, potential volunteer resources and private groups should be identified and tracked in WebEOC. Only non-emergency resources and personnel, such as public and private animal services agencies, will be used to rescue and transport animals during an evacuation effort.

It is assumed that residents that have their own means of transportation will evacuate with their small household pets. Residents that do not have access to vehicles will need to secure their pets in cages or carriers as they arrive at the transportation points. Animal Control Officers will work with animal services agencies and volunteers to develop an animal tracking methodology. If these residents do not have the required cages or carriers, they will be asked to secure their animals in their homes. This strategy places responsibility upon individual owners and will require a public education component that informs the public that carriers, cages, or trailers will be required for pet evacuations and recommends that pet owners microchip their animals for identification purposes. It is recognized that owners may refuse to evacuate their homes if they are required to leave their pets behind. Individual jurisdictions will need to identify strategies to address pet evacuations.

II. Introduction

The devastation caused by Hurricane Katrina, in 2005, has elevated the importance of evacuation planning as a key element of emergency management. Accordingly, there is an increasing recognition across the United States of the need for formal plans on how to evacuate communities and areas that have been or are likely to be stricken by disasters. Moreover, in 2006, Congress issued H.R. 2360, Department of Homeland Security Appropriations Act, which states, in part that; *"It is imperative all States and Urban Area Security Initiative grantees ensure there are sufficient resources devoted to putting in place plans for the complete evacuation of residents, including special needs groups in hospitals and nursing homes, or residents without access to transportation, in advance of and after such an event, as well as plans for sustenance of evacuees."*

Evacuation is a process by which people are moved from a place where there is immediate or anticipated danger to a place of safety, offered appropriate temporary shelter facilities, and when the threat to safety is gone, enabled to return to their normal activities, or to make suitable alternative arrangements.

Although the San Diego County Operational Area (OA) has never faced an area-wide evacuation, analysis of County hazard profiles indicates that an evacuation effort involving thousands of individuals and impacting multiple communities is highly possible. For example, the October 2003 Southern California Firestorm wildfires became the largest firestorm in California's history, forcing thousands of people from the OA to evacuate to temporary shelters.

A large scale evacuation is a complex, multi-jurisdictional effort that requires coordination between many disciplines, agencies, and organizations. It is also only one element of the larger disaster and incident response effort. Emergency services and other public safety organizations play key roles in ensuring that an evacuation is effective, efficient, and safe. In order to establish a framework for implementing a well-coordinated evacuation in the OA, the San Diego County Office of Emergency Services (OES) has developed this Evacuation Annex as an Annex to the Operational Area Emergency Plan.

Purpose

This OA Evacuation Annex is intended to be used as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. This Annex outlines strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the San Diego OA. In addition, this Annex provides general estimates on the number of residents within each jurisdiction of the OA that may potentially be impacted by specific hazards and need to evacuate, the number of residents that may require sheltering or transportation assistance, and the estimated number of pets that may need to be accommodated in an evacuation effort to assist in decision making processes. This Annex also provides hazard specific considerations, general evacuation transportation routes and capacities, county-wide shelter capacities, resources available locally and through mutual aid, and special needs considerations.

Methodology

The development of this Evacuation Annex was initiated through the establishment of an Evacuation Steering Committee, consisting of various jurisdictions, agencies, and disciplines in the OA. The Committee was instrumental in developing an Evacuation Planning Workshop that was conducted by San Diego County OES on September 28th, 2006. Nearly 80 representatives from local, State, and Federal agencies, as well as those from OA jurisdictions attended and participated in this workshop. The purpose of the workshop was to determine the overall scope and assumptions of the OA Evacuation Annex, identify current and past evacuation planning efforts, identify evacuation planning needs, prioritize planning issues, and propose plan development recommendations.

The overall goals of the workshop were to:

- Ensure that evacuation activities are effectively coordinated within the OA;
- Ensure stakeholder consensus and support of the county-wide and cross-jurisdictional evacuation planning concepts;
- Identify considerations and challenges of special needs populations;
- Encourage cross-jurisdictional and cross-agency collaboration;
- Achieve agreement regarding appropriate evacuation and shelter-in-place strategies, tactics, and triggers; and
- Ensure that effective evacuation communication processes and procedures are in place to coordinate multi-jurisdictional evacuations.

To further define and evaluate strategies and considerations associated with this Annex, six Steering Committee meetings have been conducted and the decisions, concepts, and strategies developed from these meetings are incorporated into this Annex. The Steering Committee consisted of the following agencies:

- San Diego/Imperial Counties Chapter, American Red Cross
- County of San Diego Health and Human Services Agency
- City of San Diego Office of Homeland Security
- Coronado Fire Department
- San Diego City Fire & Rescue
- County of San Diego OES
- San Diego Sheriff
- San Diego City Police

In addition, existing evacuation plans have been researched to identify evacuation best practices and lessons learned, determine the major components of a comprehensive evacuation plan, and analyze and evaluate current practices and strategies. An important document that was reviewed in this process was the *Catastrophic Hurricane Evacuation Plan Evaluation: A Report to Congress* published by the U.S. Department of Transportation in cooperation with the

U.S. Department of Homeland Security on June 1, 2006. This report provided review criteria and recommendations for evacuation plans based on lessons learned from Hurricane Katrina.

State and Local Guide 101: Guide for All-hazard Emergency Operations Planning, was also used to develop the overall structure and content of this Annex. *Attachment E – Evacuation* of this Guide, provides an overview of recommended situations, assumptions, and concepts and that should be considered in the development of an evacuation plan.

Situation and Assumptions

Situation

The OA is exposed to many hazards, all of which have the potential for disrupting communities, causing damage, and producing casualties. Dam failure, earthquake, flooding, tsunami, wildfire, and terrorism were identified by San Diego OES as the most plausible hazards to affect San Diego; all of which may require an evacuation of several communities within the OA. Table 1-1, on the following page, outlines the six hazards which may require an evacuation in the OA and the jurisdictions which are most likely to be affected by these hazards.

Assumptions

The following assumptions were established in development of this Annex:

- This Annex was developed for a Level II (moderate scale) evacuation scenario and will be activated when two or more communities within the OA are impacted by an evacuation. Additional considerations for a Level III (catastrophic) evacuation scenario are provided in Appendix A.
- For the purposes of this Annex, the evacuation distance between the impacted site and the “safe zone” generally does not exceed 30 miles, and the evacuation efforts generally do not extend beyond the OA boundaries.
- The OA has adopted the National Incident Management System and Standardized Emergency Management System and will follow the National Incident Management System and Standardized Emergency Management System principles and structures for evacuation-related activities.

Table 1-1
Major Hazards in the OA Potentially Requiring an Evacuation

	Dam Failure	Earthquake	Flood (100 Year)	Tsunami	Wildfire/ Structure Fire (High Risk Probability)	Terrorism
Carlsbad	X	X	X	X	X	X
Chula Vista	X	X	X	X	X	X
Coronado		X	X	X		X
Del Mar	X	X	X	X	X	X
El Cajon	X	X	X		X	X
Encinitas	X	X	X	X	X	X
Escondido	X	X	X		X	X
Imperial Beach	X	X	X	X		X
La Mesa	X	X	X		X	X
Lemon Grove		X	X			X
National City	X	X	X	X		X
Oceanside	X	X	X	X	X	X
Poway	X	X	X		X	X
San Diego	X	X	X	X	X	X
San Marcos	X	X	X		X	X
Santee	X	X	X		X	X
Solana Beach	X	X	X	X		X
Vista	X	X	X		X	X
Unincorporated San Diego County	X	X	X	X	X	X

Adapted from the *Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA, March 2004*

- Due to the San Diego OA hazard profile, most incidents requiring an evacuation are likely to happen with little or no warning.
- The OA will request and coordinate regional resources under the California Master Mutual Aid Agreement.
- Local jurisdictional plans will be consistent with the assumptions identified in the County of San Diego OA Evacuation Annex.
- If activated, this Annex will complement other jurisdictional evacuation plans and the jurisdictional evacuation plans will be consistent with the OA Evacuation Annex.
- Law Enforcement agencies will be the primary agency for evacuation activities with other agencies playing supporting roles.
- The OA Emergency Operations Center (EOC) will coordinate regional evacuation efforts.
- A decision to evacuate will be made at the local jurisdiction level with regional collaboration considerations.
- Terrorist incidents, as opposed to natural disasters, can occur at any location within the San Diego OA and there is no way to precisely estimate the potential number of individuals affected prior to such an incident.
- Ground and air transportation routes will generally be the primary means of evacuation in the San Diego OA. Over-water evacuations may be considered on an individual basis by each jurisdiction.
- Major ground transportation corridors in the San Diego OA will be used as primary evacuation routes during an evacuation effort.
- The San Diego OA should generally plan on not receiving Federal Emergency Management Agency (FEMA) assistance for possibly as long as 96 hours after an incident.
- Major ground transportation infrastructure within the San Diego OA will remain largely intact following an incident.
- Most people at risk will evacuate when officials recommend that they do so.
- In most emergency situations, the majority of evacuees (80 percent) will seek shelter with relatives or friends or in commercial accommodations rather than in public shelter facilities. Approximately 20 percent of evacuees will require public shelter assistance. These numbers are based on *State and Local Guide 101*. Table 1-2, provides estimates for individuals in each of the OA jurisdictions who will be potentially exposed to major hazards and may require public shelter assistance.
- Some individuals will refuse to evacuate, regardless of the threat.
- Most evacuees will use their personal vehicles to evacuate; transportation

will need to be provided to evacuees without access to personal vehicles.

- According to the U.S. Census Bureau's 2003 estimates (the latest available), 7% of households in San Diego metropolitan statistical area do not have access to a car, truck, or van for private use. Individuals in these households will require transportation assistance. In addition, a number of special needs populations will require transportation assistance.
- The decision to evacuate or shelter-in-place will be made based on the specifics of the incident. Factors such as characteristics of the populations affected, capacity to move or shelter people, roadway conditions, health and safety issues, and the duration of sheltering will be instrumental in making the decision to evacuate or to shelter-in-place.
- Naturally-occurring and man-made outbreaks of infectious disease will require only a small scale evacuation (e.g., several buildings)

Table 1-2

Individuals in OA Potentially Exposed to Major Hazards and May Require Public Shelter Assistance

	City of Carlsbad	City of Chula Vista	City of Coronado	City of Del Mar	City of El Cajon	City of Encinitas	City of Escondido	City of Imperial Beach	City of La Mesa	City of Lemon Grove	City of National City	City of Oceanside	City of Poway	City of San Diego	City of San Marcos	City of Santee	City of Solana Beach	City of Vista	Unincorporated County of San Diego
Dam Failure																			
Exposed Population	4,324	13,083	0	1,814	969	1,016	86,360	4,897	1,337	0	1,895	29,816	2,527	135,234	1,584	44,595	665	772	38,004
Shelter Estimates	865	2,617	0	363	194	203	17,272	979	267	0	379	5,963	505	27,047	317	8,919	133	154	7,601
Earthquake																			
Exposed Population	77,889	173,491	24,189	4,389	94,531	58,015	133,666	26,849	53,856	26,114	54,081	160,421	48,054	1,223,503	63,000	52,439	12,766	89,926	410,798
Shelter Estimates	15,578	34,698	4,838	878	18,906	11,603	26,733	5,370	10,771	5,223	10,816	32,084	9,611	244,701	12,600	10,488	2,553	17,985	82,160
Flood (100 Year)																			
Exposed Population	3,439	6,112	1,469	1,032	3,562	1,398	11,304	1,347	29	280	2,702	16,487	3,986	49,530	2,751	3,286	594	4,113	19,807
Shelter Estimates	688	1,222	294	206	712	280	2,261	269	6	56	540	3,297	797	9,906	550	657	119	823	3,961
Tsunami																			
Exposed Population	1,162	802	26,000**	1,021	0	704	0	72	0	0	258	1,506	0	25,578	0	0	521	0	533
Shelter Estimates	232	160	5,200	204	0	141	0	14	0	0	52	301	0	5,116	0	0	104	0	107
Wildfire/Structure Fire (High Risk Probability)																			
Exposed Population	3,302	1,208	0	43	41	1,068	2,332	0	326	0	0	1,942	4,826	16,351	4,598	3,007	0	852	16,015
Shelter Estimates	660	242	0	9	8	214	466	0	65	0	0	388	965	3,270	920	601	0	170	3,203

Adapted from the *Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA, March 2004*

** Based on the assumption that 20 percent of exposed population will require a public shelter (per State and Local Guide 101),* **Based on numbers obtained from www.coronadovisitorcenter.com

Authorities

Planning and response considerations associated with evacuation procedures are complex and must account for existing local, State, and Federal legislation and plans. This OA Evacuation Annex is intended to be used as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. The following statutes and plans are applicable to this Annex:

Federal

1. National Incident Management System
2. 42 U.S.C. §§ 5121-5206 The Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended – Provides means by which the federal government may supplement state and local resources in major disasters or emergencies where those state and local resources have been or will be overwhelmed.
3. 5 U.S.C. 5709, 5725, 5922, 5923 – Federal employees and their dependents may receive assistance if they must be evacuated.
4. 6 U.S.C. 317 – The role of FEMA includes evacuating disaster victims.
5. 15 U.S.C. 7301, 7307-7308 – National Construction Safety Teams must evaluate technical aspects of evacuation procedures and recommend research.
6. 42 U.S.C. 5195a – Emergency preparedness activities include non-military civilian evacuation and evacuation of personnel during hazards.
7. 42 U.S.C. 7403(f)(2) – Computer models for evacuation must be periodically evaluated and improved.
8. 42 U.S.C. 9601(23) – Temporary housing and evacuation of threatened persons are to be included in the scope of hazardous substance removal.
9. 42 U.S.C. 11003 – Emergency plans completed by local emergency planning committees (LEPCs) must include evacuation plans.
10. 42 U.S.C. 11004(b)(2) – Owners of facilities where a hazardous chemical release occurs must provide information on precautions to be taken, including evacuation.
11. 46 U.S.C. 70104(b) – Secretary of Transportation must establish incident response plans for facilities and vessels that include evacuation procedures.
12. P.L. 108-458, §7305, 118 Stat. 3848 – Congressional finding made that private and public sector emergency preparedness activities should include an evacuation plan.
13. H.R. 3 (109th Congress) Sec. 1304 (a) Signed by President George W. Bush on August 10, 2005 – Evacuation routes may be included as components of the National Highway System under the high priority corridor designations.
14. National Response Plan – Sets forth the roles and responsibilities of federal and certain non-federal entities after catastrophes overwhelm state and local governments.
15. 44 CFR Part 206 – federal disaster relief regulations

16. H.R. 3858 (109th Congress) - To amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to ensure that State and local emergency preparedness operational plans address the needs of individuals with household pets and service animals following a major disaster or emergency.

State

1. California Constitution
2. Standardized Emergency Management System
3. California Code of Regulations, Title 19, Chapters 1 through 6, including:
    A. Chapter 1, Standardized Emergency Management System
    B. Chapter 2, Sub-chapter 1, Individual Family Grant Program
    Chapter 2, Sub-chapter 2, Hazardous Substances Emergency Response Training
    Chapter 2, Sub-chapter 3, Disaster Service Worker Volunteer Program
    Chapter 2, Sub-chapter 4, Dam Inundation Mapping Procedures Regulations
    C. Chapter 3, Conflict of Interest
    Chapter 4, Hazardous Materials, RRIRP
    Chapter 4.5, Hazardous Materials, California Accidental Release Prevention Program
    D. Chapter 5, State Assistance for Fire Equipment Act
    E. Chapter 6, Disaster Assistance Act Regulations
4. California Department of Water Resources – Flood Fighting: California Water Code, Section 128
5. California Master Mutual Aid Agreement
6. California Fire Service and Rescue Emergency Mutual Aid Plan
7. California Law Enforcement Mutual Aid Plan
8. California Coroners Mutual Aid Plan
9. California Animal Response Emergency System – Organizes and coordinates the response of state agencies in assisting local government and volunteer organizations to address the needs of animals during disasters.
10. Section 8606 of the California Government Code – Requires the OES to enter into a Memorandum of Understanding (MOU) with the California Department of Agriculture to incorporate California Animal Response Emergency System program into their emergency planning.
11. Penal Code §§409, 409.5, 409.6
12. California Emergency Services Act, 2006

Local

1. Unified San Diego County Emergency Services Organization, Fifth Amended Emergency Services Agreement, 2005
2. County of San Diego Emergency Services Ordinance No. 8183, dated December 15, 2002
3. Unified San Diego County Emergency Services Organization, Operational Area Emergency Plan
4. San Diego County Mutual Aid Agreement
5. Public Works Mutual Aid Plan
6. County of San Diego Disaster Debris Recycling and Handling Plan
7. County of San Diego Re-Entry Protocol, September 2004
8. San Diego County Nuclear Power Plant Emergency Response Plan
9. Tactical Interoperable Communications Plan San Diego Urban Area
10. San Diego County Multi-Jurisdictional Hazard Mitigation Plan, March 2004
11. San Diego County Animal Control Mutual Aid Agreement

III. Concept of Operations

Overview

The Evacuation Annex will follow basic protocols set forth in the Operational Area Emergency Plan and the California Master Mutual Aid Agreement that dictate who is responsible for an evacuation effort and how regional resources will be requested and coordinated. The overall objectives of emergency evacuation operations and notifications are to:

1. Expedite the movement of persons from hazardous areas;
2. Institute access control measures to prevent unauthorized persons from entering vacated, or partially vacated areas;
3. Provide for evacuation to appropriate transportation points, evacuation points, and shelters;
4. Provide adequate means of transportation for persons with disabilities, the elderly, other persons with special needs, and persons without vehicles;
5. Provide for the procurement, allocation, and use of necessary transportation and law enforcement resources by means of mutual aid or other agreements;
6. Control evacuation traffic;
7. Account for the needs of individuals with household pets and service animals prior to, during, and following a major disaster or emergency;
8. Provide initial notification, ongoing, and re-entry communications to the public through the Joint Information Center; and
9. Assure the safe re-entry of the evacuated persons.

This Evacuation Annex provides a framework for the County of San Diego to coordinate and respond to a Level II (moderate) evacuation scenario. For the purposes of this Annex, a Level II evacuation is defined as an evacuation effort that impacts two or more communities within the OA, where the evacuation distance between the impacted site and the "safe zone" generally does not exceed 30 miles, and the evacuation efforts generally do not extend beyond the OA boundaries.

Although this Annex focuses on a Level II evacuation effort, additional considerations for a Level III (catastrophic) evacuation scenario are provided in Appendix A.

Hazard Profiles

As a result of the Evacuation Workshop, it was determined that the OA Evacuation Annex would focus on and provide hazard specific information and considerations for six potential scenarios. These incidents were determined to be the most likely hazards that would require the evacuation of multiple communities with the OA and include:

A. Dam Failure

B. Earthquake

C. Flood (100 Year)

D. Tsunami

E. Wildfire/Structural Fire

F. Terrorism

The 2004 San Diego County Multi-Jurisdiction Hazard Mitigation Plan was used in the development of this Annex to identify the number of people that would potentially be impacted by these hazards and may require shelter assistance in each jurisdiction.

The San Diego County Nuclear Power Plant Emergency Response Plan was also reviewed to understand the procedures that have been established to respond to an emergency at the San Onofre Nuclear Generating Station. The assessment of this Annex indicated that a response to this type of emergency would require a Level I (minor) or Level II (moderate) evacuation effort, due to the fact that there are no residents, schools, or special populations in San Diego County within the identified Emergency Planning Zone (defined as a 10 mile radius of plume exposure). This Annex determined that the only population that would be affected would be those in transit on Interstate-5, non-essential plant workers, and people at the San Onofre State Beach. It is assumed that all of these affected groups would have their own means of transportation. In addition, members of the United States Marine Corps residing on Marine Corps Base Camp Pendleton and their families would follow the directions provided by Camp Pendleton authorities.

National Policy Guidance

In order to enhance the Nation's emergency preparedness, the President has issued a series of national policy statements called Homeland Security Presidential Directives. The Homeland Security Presidential Directives mandated the development of new national planning documents to provide a detailed framework for local, State, and Federal agencies to prepare and respond to major disasters and events, including evacuations.

Homeland Security Presidential Directive-5 Domestic Incident Management was established to enhance the capability of all levels of government across the Nation to work together efficiently and effectively using a national approach to domestic incident management. This policy mandated the Department of Homeland Security to create the National Incident Management System and National Response Plan.

The National Incident Management System and Standardized Emergency Management System are based on the Incident Command System which is a management system designed to provide a structure for response to any emergency, large or small, and the Multi-Agency Coordination System. Incident Command System is used nationally by many emergency services organizations, and has been in operation for about 20 years.

The National Incident Management System and Standardized Emergency Management System provide a template for an integrated all-hazards approach to incident management. Use of the template enables federal, state, and local governments, as well as private-sector entities, to work together effectively and efficiently to prevent, prepare for, respond to, and recover from actual or potential domestic incidents regardless of cause, size, or complexity.

Decision to Evacuate

Local jurisdictions will generally make the determination on whether to evacuate communities prior to, during, or following an incident on a case-by-case basis. The decision to evacuate will depend entirely upon the nature, scope, and severity of the emergency; the number of people affected; and what actions are necessary to protect the public. In certain circumstances, the County OA may make recommendations on whether a jurisdiction should evacuate and will help coordinate the evacuation effort. However, the OA Evacuation Annex is automatically activated when an incident occurs requiring an evacuation effort that impacts two or more communities within the OA. Activation and termination of this Annex shall be at the direction of:

A. The County's Chief Administrative Officer in that capacity, or as the OA Coordinator of the Unified San Diego County Emergency Services/Organization;

B. A designated Assistant Chief Administrative Officer /Deputy Chief Administrative Officer; or

C. The Director of County OES or a designated representative.

The local governing body, or whomever the local governing body has authorized to issue an evacuation order, is primarily responsible for ordering an evacuation. This authorization can be in the form of an ordinance, resolution, or order that the local governing body has enacted.

The decision on whether to evacuate or shelter-in-place must be carefully considered with the timing and nature of the incident. An evacuation effort involves an organized and supervised effort to relocate people from an area of danger to a safe location. Although evacuation is an effective means of moving people out of a dangerous area, due to its complexity and the stress it puts upon the population, it is considered as a last resort option. Sheltering-in-place is the practice of going or remaining indoors during or following an emergency event. This procedure is recommended if there is little time for the public to react to an incident and it is safer for the public to stay indoors for a short time period rather than travel outdoors. Sheltering-in-place may be a more effective protection measure than an evacuation, especially following a chemical,

radiological, or biological incident. Sheltering-in-place also has many advantages because it can be implemented immediately, allows people to remain in their familiar surroundings, and provides individuals with everyday necessities such as the telephone, radio, television, food, and clothing. However, the amount of time people can stay sheltered-in-place is dependant upon availability of food, water, medical care, utilities, and access to accurate and reliable information.

Sheltering-in-place is the preferred method of protection for people that are not directly impacted or in the direct path of a hazard. This will reduce congestion and transportation demand on the major transportation routes for those that have been directed to evacuate by Police or Fire personnel. See Appendix B for specific sheltering-in-place instructions.

Legal Considerations

Evacuation orders should be issued when there is a clear and immediate threat to the health and safety of the population and it is determined that evacuation is the best option for protection. Evacuation orders should be described as mandatory to promote public cooperation. However, law enforcement will not use force to remove any person who remains within the affected area when directed to evacuate. Annex C of the Operational Area Emergency Plan describes that in 2005, the Chief Legal Counsel for the Sheriff maintained an opinion based on case law that Penal Code Section 409.5 does not authorize forcible or mandatory evacuations. The Chief Legal Counsel stated “without a specific legislative amendment to Penal Code Section 409.5, it would be improper to infer statutory authority to forcibly evacuate people who do not wish to be evacuated, unless their presence in the closed area, resulted from an entry made after the area was closed pursuant to 409.5(a) or 409.5(b).”

Emergency responders should clearly inform people that failure to evacuate may result in serious physical injury or death and that future opportunities to evacuate may not exist. Law enforcement will document the location of people that refuse to evacuate or have these people sign waivers. Once a local jurisdiction orders a mandatory evacuation, it is critical that public information dissemination, transportation, sheltering resources, and security and protection of private property are provided to a level where the public feels evacuation is more desirable than staying behind.

Command and Control

Basic command and control of a multi-jurisdictional evacuation effort in the OA will follow the provisions outlined in the Operational Area Emergency Plan and the California Master Mutual Aid Agreement, as with any emergency or disaster. All jurisdictions within the OA will operate according to the National Incident Management System and Standardized Emergency Management System, and respond utilizing the Incident Command System.

Response to an emergency or disaster is managed at the lowest level possible. Accordingly, local governments have the primary responsibility for evacuation preparedness and response activities and must develop individual evacuation plans or annexes in coordination with their respective Emergency Operation Plans (EOPs). The Standardized Emergency Management System, National Incident Management System, and Incident Command System dictate that response to any incident is initiated by local resources. If the event escalates beyond the

capability of the local jurisdiction or expands to affect multiple jurisdictions, then State, and possibly Federal resources will be requested through the Mutual Aid System and under the National Response Plan.

Any large-scale response to an incident, including those resulting in the evacuation of more than two impacted communities, will need to be coordinated through the OA EOC operating under a Unified Command. The Coordinator of Emergency Services will coordinate the overall multi-jurisdictional evacuation effort and the OA Law Enforcement Coordinator will be responsible for coordinating OA-wide evacuation activities. This coordination will be accomplished in the OA EOC with the involved jurisdictional EOCs and the Sheriff's Department Operations Center. Evacuation operations in the field will be conducted by law enforcement agencies, highway/road/street departments, and public and private transportation providers.

Communications

Inter-jurisdictional and inter-agency coordination will be conducted through the Incident Command Posts, OA EOC, San Diego County Medical Operations Center, jurisdictional EOCs and Department Operations Centers utilizing available communications equipment and infrastructure. Situational awareness will be supported through data-sharing systems such as WebEOC to expedite the transfer of information regarding the status of the incident. Activation, coordination, and use of the Joint Information Center will be initiated as soon as possible following an incident. The OA Joint Information Center will function to coordinate information to the media. All information released to the public regarding the incident will be cleared by Public Information Officers in the Joint Information Center. Real-time informational updates regarding evacuation routes, evacuation points, shelter capacities, and other essential information will be provided to evacuees en-route through emergency radio stations, 5-1-1, and Caltrans Changeable Message Signs.

All communication efforts will follow the protocols established under the San Diego Urban Area Tactical Interoperable Communications Plan and Annex I of the Operational Area Emergency Plan. Re-entry into the impacted communities will follow the procedures outlined in the County of San Diego Re-Entry Protocol. See Section 3 for a more detailed analysis of communication considerations.

Transportation Requirements

The primary mode of transportation that will be used during jurisdictional evacuation efforts will be privately owned automobiles. The OA will use available resources, Memorandums of Understanding and Agreement (MOUs/MOAs) with public and private transportation agencies, and mutual aid to procure, coordinate, and provide adequate means of transportation for those people that do not own or have access to automobiles, have disabilities which limit their transportation options, or have other special needs.

Primary evacuation routes consist of the major interstates, highways, and prime arterials within San Diego County. Local jurisdictions will work with the OA EOC, law enforcement officials, California Department of Transportation (Caltrans), California Highway Patrol (CHP), Public Works, and other applicable agencies/departments to identify evacuation points and

transportation routes. In addition, transportation points will be identified to collect and transport people without transportation resources to evacuation points.

The following major interstates and highways within San Diego County were identified as the primary transportation routes for an evacuation effort:

Interstate 5	Route 75
Interstate 8	Route 76
Interstate 15	Route 78
Interstate 805	Route 94
Route 52	Route 125
Route 54	Route 163
Route 56	Route 905
Route 67	

For more detailed information on transportation strategies, traffic control, transportation resources, and evacuation routes see Section 4.

Evacuation Points and Sheltering

Local jurisdictions will work with law enforcement agencies to identify and establish evacuation points. These evacuation points will serve as temporary safe zones for evacuees and will provide basic needs such as food, water, and restrooms. Some evacuation points may be converted into shelter locations if necessary. Care and shelter operational procedures are outlined in Annex G of the Operational Area Emergency Plan.

Transportation points will also be identified to collect and transport people without transportation resources to evacuation points. These points should be large, well known sites such as shopping centers, libraries, and schools.

Special Needs Populations

The evacuation of individuals who have special needs or are vulnerable pose many difficult challenges with respect to notification, evacuation, emergency transportation, sheltering requirements, and information dissemination.

For the purposes of this Annex, special needs populations include at-risk populations and are defined as people who are elderly; people with disabilities and other medical conditions; people with limited English proficiency; people with hearing and sight impairments; people who are in institutions; and people without access to private vehicles. Locating personnel with special needs is one of the most challenging aspects of this Annex.

Due to liability concerns and the effort required to maintain databases, it was determined that self identification is not an acceptable solution for pre-identifying special needs populations in the San Diego OA for notification purposes. Reverse 9-1-1 and the Community Emergency Response Teams (CERTs) are the best means available for notifying these populations during an evacuation effort.

The traditional types of notification methods may not meet the requirements of personnel who are blind or have poor vision or are deaf or hard of hearing. Notification procedures must include multiple types of methodologies to ensure all segments of the population are provided with the required information. Specific forms of notification can include telephone, television messages with open captioning or sign language, auto-dialed teletypewriter messages, text messages, or email.

It is critical that modes of available transportation are identified that can accommodate people with disabilities during an evacuation. Transportation that can accommodate personnel in wheelchairs, scooters, or other mobility aids needs to be made available. Some potential options can be the use of lift-equipped school buses or vans.

All shelters should be Americans with Disabilities Act compliant throughout the facility to ensure persons with disabilities can access all amenities. All potential shelter sites should be assessed for parking, accessibility, and restroom accommodations to determine if these sites are complaint with the Americans with Disabilities Act.

Care and Protection of Animals

The Pets Evacuation and Transportation Standards Act of 2006 amends the Stafford Act, and requires evacuation plans to take into account the needs of individuals with household pets and service animals, prior to, during, and following a major disaster or emergency.

The San Diego County Department of Animal Services has plans in place to transport and shelter pets in a disaster under Annex O of the Operational Area Emergency Plan including the Animal Control Mutual Aid Agreement. Animal Control Officers, the San Diego Humane Society, and private animal care shelters will assist in the rescue, transport, and sheltering of small and large animals. MOUs need to be formalized with other agencies/organizations, especially for the transportation of large animals, such as horses. In addition, potential volunteer resources and private groups should be identified and tracked in WebEOC. Only non-emergency resources and personnel, such as public and private animal services agencies, will be used to rescue and transport animals during an evacuation effort.

Roles and Responsibilities

The roles and responsibilities of local, County, State, and Federal governments in an evacuation effort are summarized in the following sections. Refer to the Operational Area Emergency Plan for additional information related to County OA emergency management operations. In addition, departments and agencies assigned responsibilities in this Annex are accountable for developing and maintaining Standard Operating Procedures (SOPs) which cover those responsibilities.

Local Jurisdictions

Each incorporated jurisdiction is responsible for developing an evacuation plan or annex as part of their EOP. The decision to order an evacuation will be made by the Incident Commander at the local level based on situational reports. Impacted jurisdictions will be responsible for activating their EOC during an incident and for communicating and coordinating resources with

the OA EOC. If two or more communities are impacted by an evacuation effort, then incident response will be coordinated through the OA EOC under a Unified Command.

County

Annex C of the Operational Area Emergency Plan describes the roles and responsibilities assigned to County Departments during an evacuation effort. The Coordinator of Emergency Services will coordinate an overall multi-jurisdictional evacuation effort. In general, the various County Departments will help coordinate evacuation efforts for the incorporated areas and will direct and conduct evacuation operations for the unincorporated areas of the County of San Diego.

During an evacuation effort, the designated County Evacuation Coordinator is the Sheriff. The Evacuation Coordinator will be assisted by other law enforcement and support agencies. Evacuation operations will be conducted by the County of San Diego Sheriff's Department, Fire and Rescue, County Health and Human Services Agency, Department of Animal Services, Department of Planning and Land Use, Department of Environmental Health, Department of General Services, Department of Public Works, Department of Agriculture, Weights, and Measures, and the Department of Parks and Recreation.

The OA Law Enforcement Coordinator is responsible for coordinating transportation resources and operations on a countywide basis. This coordination will be accomplished in the OA EOC with the involved City EOCs, Department Operations Centers, and the Sheriff's Department Operations Center.

Specific County roles and responsibilities are described below.

Office of Emergency Services

1. Responsible for the development, maintenance, and testing of the OA Evacuation Annex.
2. Coordinate evacuation efforts with local jurisdictions that may be affected by the evacuation.
3. Direct and coordinate resources in support of evacuation efforts.
4. Approve release of warnings, instructions, and other emergency public information related to the evacuation effort.
5. Report situation and damage assessments to the Governor's OES.
6. Maintain expenditure records to facilitate reimbursement.
7. Coordinate and maintain files of all initial assessment reports.
8. Coordinate the development of after-action reports.

Sheriff's Department/Law Enforcement

1. Provide evacuation notification and advisory to unsafe areas.
2. Identify transportation and evacuation points.
3. Coordinate relocation of people to safe areas with other agencies.

4. Search vacated areas to ensure that all people have received warnings.
5. Provide initial field situation reports and updates from field units and Aerial Support to Regional Enforcement Agencies.
6. Contact the American Red Cross for potential and confirmed evacuation and shelter needs of displaced population.
7. Coordinate the provision of transportation resources to special needs populations.
8. Provide traffic control measures for evacuation effort.
9. Provide law enforcement and crowd control measures at transportation points, evacuation points and mass care facilities.
10. Provide security and access control to vacated areas.
11. Request mutual aid assistance from the OA or Regional Law Enforcement Coordinator.
12. Establish traffic control and other measures to permit re-entry into the impacted communities as dictated by the County of San Diego Re-Entry Protocol.

Fire and Rescue Operations

1. Assist with evacuation efforts and medical response.
2. Coordinate rescue operations.
3. Provide fire protection and search and rescue in the vacated areas.
4. Support public safety in evacuation execution.

County Health and Human Services Agency

1. Assist the American Red Cross in providing mass care.
2. Ensure specialized services are provided as required for special needs population groups including the aged and those with disabilities.
3. Assist the American Red Cross in coordination with the Logistics Section of the OA EOC to ensure the transportation of evacuees to and from shelters.
4. Provide care for unaccompanied minors until County shelters are established.
5. Inspect shelters for food safety and sanitation conditions.

Department of Animal Services

1. Direct emergency animal control operations during a disaster within the unincorporated areas and contracted jurisdictions.
2. Coordinate emergency animal control operations during a disaster if more than one jurisdiction is impacted.
3. Develop and implement a system to identify and track animals received during a disaster.
4. Coordinate the transportation of animals to animal care facilities as requested.

Department of Planning and Land Use

1. Work with the Fire Department to conduct damage assessment.
2. Conduct safety assessments and coordinate with FEMA and Cal EMA Damage Assessment Teams.
3. Deem structures safe to re-enter.

Department of Environmental Health

1. Evaluate County facilities for re-occupancy after an emergency, including ventilation systems.
2. Perform health hazard evaluations and provide recommendations to Departments regarding disaster-related issues (including asbestos, lead, mold, etc).
3. Perform drinking water testing.

Department of General Services

1. Inspect and report on the status of communications sites and regional/county facilities.
2. Provide support to OES for the set up of Assistance Centers (Local, Family and Disaster) if located in County owned facilities or in the unincorporated areas.
3. Provide generators for County owned facilities.

Department of Public Works

1. Inspect and report on county roads.
2. Inspect and report on drainage/flood control facilities.
3. Inspect and report on County water and wastewater facilities and other county facilities.
4. At the direction of law enforcement, open and close county roads.
5. Direct debris removal and recycling in the unincorporated areas.
6. Maintain the ALERT Flood Warning System.
7. Perform shelter inspections prior to occupancy.

Department of Agriculture, Weights, and Measures

1. Assist in interagency operations and public information.
2. Assist in Geographic Information Systems (GIS)/Mapping and web pages.
3. Assist in resource ordering and damage assessment.

Department of Parks and Recreation

1. Department of Parks and Recreation may be able to provide use of park space for temporary housing in time of a disaster.

2. All County parks will be available for the evacuated public and large animals at the request of law enforcement.
3. All County parks and community centers will be available for temporary fire recovery centers and programs as requested.

State Agencies

A designated member of the CHP will function as the Cal EMA Mutual Aid Region Movement Coordinator and will coordinate traffic control operations on a region-wide basis. The Movement Coordinator will be assisted by a representative of Caltrans, who will function as the Mutual Aid Region Transportation Coordinator. These coordinators will work between the OA and the State in coordination of resources.

State agencies which may be involved in an evacuation effort include Cal EMA, Caltrans, and CHP.

California Emergency Management Agency

1. Coordinate State and Federal resources to aid in disaster recovery for individuals, families, certain private non-profit organizations, local and state government.
2. Coordinate requests for State and Federal emergency declarations.
3. Participate in damage assessments.
4. Provide environmental/historical, engineering and technical assistance.
5. Administer State and Federal Public Assistance and hazard mitigation grants, including payment and processing.
6. Provide program oversight of other state-administered disaster recovery.
7. Lead community relations elements in times of disaster.
8. Coordinate the establishment of Joint Field Offices, Disaster Resource Centers, and Local Assistance Centers.

California Department of Transportation

1. Provide reports and estimates on state roads, highways and freeways, including all overpasses, underpasses and bridges.
2. Establish and implement long-term closures for detouring and channelization of traffic.
3. Activate Changeable Message Signs to inform motorists of changes in road conditions ahead.

California Highway Patrol

1. Provide initial reports on damage to roads, highways and freeways.
2. Coordinate with Caltrans and local jurisdictions as applicable to barricade or secure unsafe sections of roadway.

3. Assist emergency vehicles and equipment in entering or leaving hazardous areas.
4. Monitor truck traffic to ensure safe transport of debris during debris removal and demolition operations.
5. Coordinate the Interstate traffic during the evacuation.
6. Coordinate re-entry of displaced populations per the County's Re-Entry Protocol.

Federal

The overall responsibility for evacuation rests with local government. However, when local capabilities are no longer sufficient to deal with the incident response, local government, through the OA, will request assistance from the State. If State resources are insufficient, the Governor will request assistance from the Federal Government. The President may declare a major disaster and the National Response Plan, including the Catastrophic Incident Annex may be activated.

Emergency Support Functions provide the structure for coordinating Federal interagency support for Incidents of National Significance. The Emergency Support Function structure includes mechanisms used to provide Federal support to local, State, tribal governments, or to Federal departments and agencies, both for declared disasters and emergencies under the Stafford Act and for non-Stafford Act incidents. Emergency Support Functions are groupings of government and certain private-sector capabilities into an organizational structure to provide the support, resources, program implementation, and services that are required to save lives, protect property and the environment, restore essential services and critical infrastructure, and help victims and communities return to normal, when feasible, following domestic incidents. Per the National Response Plan, each Emergency Support Function has an identified Emergency Support Function coordinator as well as primary and secondary support agencies.

Evacuation efforts by local and State governments would be supported under several Emergency Support Functions, including Emergency Support Function #1 – Transportation, Emergency Support Function #2 – Communication, Emergency Support Function #3 – Public Works and Engineering, Emergency Support Function #3 – Emergency Management, Emergency Support Function #6 – Mass Care, Housing, and Human Services, Emergency Support Function #8 – Public Health and Medical Services, and Emergency Support Function #9 – Urban Search and Rescue.

Community Based Organizations and Private Agency Resources

A. American Red Cross

The American Red Cross was chartered by Congress to be the leading disaster relief organization in the United States. The American Red Cross assumes the role of providing food, shelter, emergency first aid, disaster welfare information, and bulk distribution of emergency relief items. The organization also serves as a support agency for public health and medical services by providing blood, mental health services, and disaster health services, among other support functions. The American Red Cross also feeds emergency workers, handles inquiries from

concerned family members outside the disaster area, provides blood and blood products to disaster victims, provides assistance in locating missing persons, and helps those affected by disaster to access other available resources. The American Red Cross will also work with the San Diego County Health and Human Services Agency in providing mass care.

B. Public and Private Animal Care Agencies

The San Diego Humane Society, Zoological Society, Veterinary Medical Association, Public Animal Control agencies, and private animal care shelters can provide assistance in animal control operations during an evacuation effort which include:

- Assist in the recovery and rescue of animals.
- Provide temporary corrals or trailers for large animals.
- Coordinate the provision of emergency shelters for animals.

C. Utility Agencies

San Diego Gas and Electric (SDG&E), the San Diego County Water Authority, AT&T, and other utility agencies will play vital roles following an incident by assessing utility damage, setting guidelines and priorities for utility restoration, coordinating with local and State governments, and assessing the need for mutual aid assistance.

D. Goodwill Industries

Goodwill Industries will work with OES to coordinate the mobilization and management of spontaneous donations that are made by the public following a disaster.

E. Salvation Army

The Salvation Army may provide recovery assistance through its donations management, mobile feeding, emergency shelter, applicant registration, collection and distribution of clothing and supplies, counseling, and language interpretation.

F. Volunteers

Members of the community will likely show up at the impacted area, evacuation and transportation points, and shelters to volunteer their time and resources to assist in the evacuation effort. Although these people have the best intentions, they can sometimes impede the response progress. It is critical that jurisdictions establish and implement spontaneous volunteer management plans to ensure the efficient and effective use of volunteers. All Spontaneous Volunteer coordination in the OA will be directed through Volunteer San Diego.

G. 2-1-1 Informational Line

2-1-1 is the new national dialing code for free, 24-hour community, health and disaster information. Like 9-1-1 for emergency service, 2-1-1 has been set aside by the Federal Communications Commission for the public to easily access

community information. Callers receive personalized information from a live phone specialist who can answer questions about a variety of nonprofit services and agencies. In times of disaster, 2-1-1 can be mobilized as a central point for disseminating public information. After the danger has passed, 2-1-1 helps victims secure recovery assistance.

H. Businesses

Following an incident, a number of businesses are likely to donate large, uniform quantities of products and supplies. These products and supplies will be managed and distributed in the OA based on the greatest needs. In addition, businesses will be instrumental in restoring infrastructure and facilitating economic recovery in San Diego County.

IV. Communications

Effective, interoperable, reliable, timely, and redundant communications and information management are essential to a successful evacuation effort. Communications considerations include the initial evacuation notification to the public, inter-jurisdictional and intra-agency communication, situation report updates, real-time communication updates to evacuees, and communications with special needs populations.

All communication efforts will follow the protocols established under the San Diego Urban Area Tactical Interoperable Communications Plan and Annex I of the Operational Area Emergency Plan.

Public Notification and Communications

Effective and informative notification to the public will be vital to convincing them that they should evacuate or shelter-in-place. The public must understand why they need to evacuate or shelter-in-place, how long they will need to do so, the location of transportation and evacuation points, the time required for evacuations, the availability of shelters, what they should take with them, how their pets will be accommodated, how they should secure their homes, and the security that will be provided when they are away from their homes. If the event happens during the weekday and school children are being evacuated, parents will need timely information on where to pick up their children. Notification methods will include the Emergency Alert System, use of the local media through television and radio, internet, and Reverse 9-1-1. The majority of evacuation advisories will be based on a non-notice or short notice incident. Without proper information, people may evacuate towards a hazard, putting them in greater danger, or may evacuate unnecessarily and create additional congestion on identified evacuation routes.

In the event of a no-notice or short-notice incident that will require an evacuation effort, the media will most likely be the first to notify the public. The Joint Information Center will not be functional and will not be able to provide information to the media or the public until the OA EOC is activated.

It is also important to note that certain methods of communicating with the public may not be

available following an incident, including television and the internet. In the event of a total loss of television or internet connectivity, the County has the ability to override AM/FM radio bands. KOGO 600AM and KLSD 1360 AM radio stations will function as the primary and secondary local radio stations that broadcast emergency information to the public.

Initial Notification

Effective initial communication to the public will enhance the efficiency of the overall evacuation and reduce the associated mental and physical strains. The public is often confused by evacuation information and unable to make informed decisions on evacuations. Some people will not know if they are in a hazardous area, will evacuate unnecessarily, or may not know when to respond to an order of evacuation. The initial public notification shall provide basic information to residents including:

1. Whether residents should evacuate or shelter-in-place.
2. The areas that need to be evacuated, with reference to known geographic features.
3. Why and when residents should evacuate.
4. The time required for evacuation efforts.
5. The designated transportation and evacuation points and evacuation routes.
6. Available transportation options.
7. What residents should take from their homes.
8. How long the evacuation is expected to last.
9. How pets will be accommodated.
10. Security plans that are in place to protect residential property.
11. When informational updates will be made available.
12. Other information deemed appropriate and required before residents evacuate.

For people that will be relying on transportation points, it is important that these people are informed about when transportation services will begin and end, transportation point locations, frequency of pick-ups, travel destinations (evacuation points), and what to bring with them (see Appendix C).

Available communication tools/capabilities which may be used to notify the general public about the need to evacuate or shelter-in-place include:

1. Emergency Alert System
2. Community Emergency Notification System
3. Reverse 9-1-1
4. 2-1-1
5. Emergency websites
6. Television including County Television Network
7. Radio

8. Public address systems
9. Helicopters equipped with bullhorns
10. Low power local radios
11. Police cruisers equipped with bullhorns
12. Door to door notification
13. Changeable Message Signs

Communicating with Special Needs Populations

The traditional types of notification methods may not meet the requirements of those with special needs, such as those who are blind, have poor vision, are deaf or are hard of hearing. Notification procedures will be tailored to each special need group, employing multiple methodologies to ensure that all segments of the population are provided with the necessary information. Generally, Reverse 9-1-1 and CERT will be the primary means of contacting special needs populations. Other forms of notification that are effective can include telephone, television messages with open captioning or sign language, auto-dialed teletypewriter messages, text messages, email, or direct door-to-door notification , or special programs such as Project Care “You are not alone.”

Local jurisdictions should also establish relationships with public and private agencies that provide home-based care provision services or work with special needs populations.

Evacuation Informational Updates

The public must be provided coordinated, frequent, and accurate information during an evacuation effort. Real-time updates must be communicated to evacuees that include the location of transportation and evacuation points; evacuation routes; road and area closures; the availability of hotels, food, fuel, medical and other essential services; traffic conditions; and shelter capacities. Other essential information to be conveyed to the public includes the security measures that are being implemented, weather conditions, and any changes to evacuation plans.

Real-time informational updates will be provided to evacuees en-route through emergency radio stations, television, websites, 2-1-1 and 5-1-1 informational lines, and highway Changeable Message Signs. It is also recommended that local jurisdictions consider posting signs along major evacuation transportation corridors that provide information about emergency numbers or radio stations that can be used during an emergency.

The Joint Information Center is responsible for providing informational updates to the public and to the media. Depending on the duration of the evacuation, communication methods may vary from the onset of the evacuation to the conclusion of the evacuation. Therefore, it is important that the public understands how they can continue to access informational updates for the duration of the incident.

Inter-Jurisdictional and Inter-Agency Communications

Inter-jurisdictional and inter-agency coordination will be conducted through the Incident Command Posts, OA EOC, San Diego County Medical Operations Center, and jurisdictional EOCs and Department Operations Centers utilizing available communication equipment and infrastructure and using established procedures (See Annex I of the Operational Area Emergency Plan). Agency liaisons will also be present in the OA EOC and in impacted jurisdictional EOCs to facilitate communication between agency operation centers. Situational awareness will be supported through data-sharing systems such as WebEOC to expedite the transfer of information regarding the status of the incident. Emergency managers must be able to make informed decisions based on changing risks, resources, and capabilities throughout the execution of the evacuation effort. The identification of operational adjustments and alternative evacuation routes based on traffic monitoring, infrastructure damage, and other information must effectively communicated to all affected jurisdictions, agencies, and the public. Effective and efficient communication is essential for information sharing and status updates to all affected jurisdictions. In addition, it is critical that jurisdictional EOCs coordinate evacuation efforts with the OA EOC to ensure potential conflicts are conciliated. This may involve phasing community evacuation efforts or the allocation of critical resources.

Multiple techniques and systems exist in San Diego County to facilitate the necessary region-wide communication. These interoperable resources, the agencies that control each of these resources, and the protocols and procedures for activating these resources are provided in the San Diego Urban Area Tactical Interoperable Communications Plan.

Communication Contingency Plans

In the event of total devastation to all local electronic communications, the Joint Information Center will contact Orange County or Los Angeles County radio stations to broadcast emergency information to the general public in stricken areas.

Radio Amateur Civil Emergency Service (RACES) has the ability to obtain a great deal of information for local governments even when other communications systems are unavailable. The Radio Amateur Civil Emergency Service will be heavily relied upon to relay information from the incident site to the EOC.

Additional Sources of Information

Additional sources of information that may be available during an evacuation effort include:

- San Diego County Emergency Homepage: http://www.sdcountyemergency.com
- County of San Diego OES Website: http://www.readysandiego.org
- American Red Cross Website: www.sdarc.org or (858) 309-1200
- Nationwide Travel Information phone number: 5-1-1
- Nationwide Disaster Information: 2-1-1
- Traffic Information Website: www.sigalert.com
- California Organization of Transportation website: www.dot.ca.gov

Hazard-Specific Considerations

Dam Failure:
A dam failure incident would involve a short-notice evacuation effort and all available means of communicating warnings to the public would need to be utilized as quickly as possible. There would be little time to obtain the necessary personnel and equipment to warn the public, therefore it is essential that jurisdictions that may be impacted by dam inundation hazards, have a plan to quickly carry out communication efforts with limited resources.

The OA has site-specific dam evacuation plans for the major dams/reservoirs in San Diego County.

Earthquake:
An earthquake incident would occur with out any notice and may cause power outages or damage to certain communication resources. In these circumstances, back-up communication resources may need to be used.

Additional information on earthquake faults can be found in the OA Emergency Plan's Basic Plan Section, or from the United States Geological Survey website at www.usgs.gov.

Flood (100 Year):
Communication of approaching storms and associated precipitation could allow some initial pre-incident preparation and planning (i.e. purchase of sandbags, etc).

The public must be informed that they should not attempt to drive through water on a road. Most vehicles can be swept away by less than two feet of moving water.

The public should also be informed to avoid walking through floodwaters. People can be swept away by as little as two-inches of moving water.

Tsunami:
A tsunami incident would involve a short-notice evacuation effort. All available means of quickly communicating warnings and instructions to the public would need to be utilized. This would include use of lifeguards to evacuate beaches, moving vehicles with speakers and sirens, and helicopters with bullhorns as potential communication strategies.

Wildfire/Structural Fire:
Wildfires may travel large distances relatively fast and quickly develop into emergency situations. In these situations, advanced warning should be communicated to the public as soon as possible. Information should include preparedness actions such as securing property, assembling disaster supplies, refueling vehicles, and the identification of evacuation routes. Emergency responders must be prepared to make evacuation announcements via bullhorns, loudspeakers, or via door-to-door notification process as soon as the situation necessitates.

Special facilities such as correctional facilities, nursing homes, and hospitals that may be impacted should be contacted and requested to review and be prepared to implement their evacuation plans.

Terrorism:
An act of terrorism is intended to disrupt a community's way of life through violence and physiological fear. Effective, relevant, and timely information will be critical in easing the public's fear following a terrorist incident.

At times, the best response to protect public safety from certain biological or chemical terrorist attacks will be to shelter-in-place. Information and directions on whether the public should evacuate or shelter-on-place must be adequately conveyed during the initial public notification.

Advanced notice may be available for certain terrorist attacks. These types of incidents will be handled on a case-by-case basis and the decision to communicate an evacuation order will be made at the local level through the Incident Commander.

V. Transportation

Modes of Transportation

The primary mode of transportation that will be used during jurisdictional evacuation efforts will be privately owned automobiles. However, it is critical that evacuation plans identify and provide other safe modes of transportation for those people that cannot evacuate by private vehicle and for special needs populations. The County is developing MOUs/MOAs with the Metropolitan Transit System and the North County Transit District for the use of buses, trolleys, and rail resources and the provision of bus drivers, light rail transit operators, and paratransit operators. Agreements with private school and charter bus companies will also be pursued. In addition, the County will work on establishing and maintaining working relationships with partner organizations including advocacy organizations, agencies that serve the transportation-dependent populations, and faith and community based organizations. All available transportation resources will be included in the WebEOC tracking system database.

The OA will use available resources, MOUs/MOAs with public and private transportation agencies, and mutual aid to procure, coordinate, and provide adequate means of transportation for those people that do not own or have access to automobiles, have disabilities which limit their transportation options, or have other special needs.

Transportation Points

Local jurisdictions will work with law enforcement agencies to identify and establish transportation points. Transportation points will function to collect and transport people without transportation resources to evacuation points. The estimated number of people in each jurisdiction within the OA that will require transportation assistance for each potential hazard is presented in Table 4-1.

These points should be large, well known sites such as shopping centers, libraries, and schools. The overall number and location of evacuation points should be based on the population that needs to be accommodated and with the understanding that evacuees will reach these points

by foot. Law enforcement personnel should ensure these points are well marked through the use of signs or other forms of identification. It is critical that people are informed of their destinations prior to using provided public transportation.

Transportation Coordination

Staging areas will be established to first stage and then obtain control over transportation resources in support of transportation point operations. Strike Teams/Task Forces can then be used to coordinate these resources effectively. The assigned leader of the Strike Team/Task Force will be responsible for coordinating these resources and will have the ability to communicate with command and control of the evacuation and each of the drivers. It is critical that control over transportation resources is maintained, especially after evacuees are dropped off at the evacuation points, and drivers must be re-routed to other transportation points.

Law enforcement escorts can also be used to provide force protection and maintain control over transportation resources. Law enforcement vehicles can maintain communications with authorities via radio. These escorts can therefore be used to coordinate real-time information on road conditions, evacuation and transportation points, and other critical information.
Overall evacuation routes need to be coordinated across jurisdictional boundaries. There may be a need for sustained inter-jurisdictional coordination between evacuated communities and host communities along or near the evacuation routes.

Evacuation Routes and Capacities

Primary evacuation routes consist of the major interstates, highways, and prime arterials within San Diego County. Local jurisdictions will work with the OA EOC, law enforcement officials, Caltrans, CHP, Department of Public Works, and other applicable agencies/departments to identify evacuation points and transportation routes. In addition, transportation points will be identified to collect and transport those people without transportation resources to evacuation points.

Evacuation Route Determination

It will be necessary to identify evacuation points before evacuation routes are announced to the public. Evacuation routes will be determined based on the location and extent of the incident and will include as many pre-designated transportation routes as possible. Important roadway characteristics and factors that should be considered when selecting an evacuation route include:

1. Shortest route to the designated destination areas;
2. Maximum capacity;
3. Ability to increase capacity and traffic flow using traffic control strategies;
4. Maximum number of lanes that provide continuous flow through the evacuation area;
5. Availability of infrastructure to disseminate real-time conditions and messages to evacuees en-route, such as Changeable Message Signs; and
6. Minimal number of potentially hazardous points and bottlenecks, such as bridges, tunnels, lane reductions, etc.

Traffic conditions must be monitored along evacuation routes and operational adjustments should be made as necessary to maximize throughput. These adjustments may include the identification of alternative evacuation routes.

Table 4-1
Estimated Number of People That Will Require Transportation Assistance

	City of Carlsbad	City of Chula Vista	City of Coronado	City of Del Mar	City of El Cajon	City of Encinitas	City of Escondido	City of Imperial Beach	City of La Mesa	City of Lemon Grove	City of National City	City of Oceanside	City of Poway	City of San Diego	City of San Marcos	City of Santee	City of Solana Beach	City of Vista	Unincorporated County of San Diego
Dam Failure																			
Exposed Population	4,324	13,083	0	1,814	969	1,016	86,360	4,897	1,337	0	1,895	29,816	2,527	135,234	1,584	44,595	665	772	38,004
Assistance Estimate	302	915	0	127	68	71	6,045	343	94	0	133	2,087	177	9,466	111	3,121	47	54	2,660
Earthquake																			
Exposed Population	77,889	173,491	24,189	4,389	94,531	58,015	133,666	26,849	53,856	26,114	54,081	160,421	48,054	1,223,503	63,000	52,439	12,766	89,926	410,798
Assistance Estimate	5,452	12,144	1,693	307	6,617	4,061	9,356	1,879	3,770	1,828	3,786	11,229	3,364	85,645	4,410	367	893	6295	28,756
Flood (100 Year)																			
Exposed Population	3,439	6,112	1,469	1,032	3,562	1,398	11,304	1,347	29	280	2,702	16,487	3,986	49,530	2,751	3,286	594	4,113	19,807
Assistance Estimate	240	427	102	72	249	98	791	94	2	20	189	1,154	279	3,467	193	230	42	288	1,386
Tsunami																			
Exposed Population	1,162	802	26,000	1,021	0	704	0	72	0	0	258	1,506	0	25,578	0	0	521	0	533
Assistance Estimate	81	56	1,820	72	0	49	0	5	0	0	18	105	0	1,790	0	0	36	0	37
Wildfire/Structure Fire (High Risk Probability)																			
Exposed Population	3,302	1,208	0	43	41	1,068	2,332	0	326	0	0	1,942	4,826	16,351	4,598	3,007	0	852	16,015
Assistance Estimate	231	85	0	3	3	75	163	0	23	0	0	136	338	430	321	210	0	60	1,121

Average Daily Traffic

Traffic volume data can provide useful information to emergency managers when determining evacuation routes and durations. Table 4-2 presents the average weekday traffic counts for interstates and highways in the OA. These traffic counts represent the recorded two-way, highest averaged 24-hour daily traffic volumes that were collected along numerous segments of each roadway in 2005.

Table 4-2
Highest Average Weekday Traffic Volumes in San Diego County

Interstate/ Highway	Highest Average Weekday Traffic Volumes
Interstate 5	274,000
Interstate 8	328,700
Interstate 15	316,200
Interstate 805	259,300
Route 52	128,100
Route 54	124,900
Route 56	71,700
Route 67	96,800
Route 75	82,900
Route 76	54,300
Route 78	160,200
Route 94	188,000
Route 125	170,600
Route 163	256,800
Route 905	69,400

Source: Caltrans

Roadway Capacity

Roadway capacity represents the maximum number of vehicles that can reasonably be accommodated on an evacuation route. Roadway capacity is measured in vehicles per hour. Roadway capacities can fluctuate based on the number of available lanes, number of traffic signals, construction activity, accidents, and obstructions. Each roadway classification has a different capacity, with freeways and highways having the highest capacities. Based on Highway Capacity Manual guidelines, and using peak numbers, the average freeway can accommodate 2,200 vehicles per hour per lane, at a speed of 30 miles per hour (mph).

Approximate roadway capacities were determined for San Diego County highways, interstates, and prime arterials, using San Diego Association of Governments data (see Appendix D). These numbers reflect the AM peak hourly capacity numbers for the worst case segment of each roadway.

Determination of Evacuation Times

The length of time it will take for an area to evacuate can be determined by dividing the number of vehicles that need to evacuate by the total roadway capacity. This formula is provided below:

$$\text{Evacuation Time} = \frac{\left(\frac{\text{Evacuation Population}}{\text{Average Vehicle Occupancy}}\right)}{\text{Roadway Capacity}}$$

Using the at-risk jurisdictional population data for each hazard, estimated roadway capacities, and an average occupancy of 1.5 persons per vehicle, this formula can be used to estimate evacuation times.

Sample Calculations

Evacuation time for the exposed population in the City of Santee during a wildfire using the SR-52 WB as an evacuation route:

$$\text{Evacuation Time} = \frac{\left[\frac{3{,}007 \text{ (exposed population from Table 4-1)}}{1.5 \text{ (average vehicle occupancy)}}\right]}{3600 \text{ vph (capacity for SR-52 WB from Appendix D)}}$$

$$\text{Evacuation Time} = \frac{2{,}004.67}{3{,}600 \text{ vph}}$$

Evacuation Time = 0.56 hours or approximately 34 minutes to evacuate the exposed population in the City of Santee using the SR-52 WB during a wildfire.

Transportation Strategies

There are many transportation strategies that are available that can be implemented during an evacuation effort to enhance traffic flow and reduce the overall evacuation time. These

strategies include contra-flow, traffic signal coordination, closure of off and on-ramps, Intelligent Transportation System, segregation of pedestrian and vehicle traffic, exclusive bus routes, phased evacuation, phased release of parking facilities, use of designated markings, road barriers, and use of the San Diego Freeway Patrol Service.

Contra-Flow Operations

Contra-flow is a tactic in which one or more lanes of a roadway are reversed to allow for an increase of traffic flow in one direction. Contra-flow can be implemented for highway and arterial roadways, however, the unsignalized, divided, and access-controlled configurations of highways make these roadways ideal for contra-flow operations. An important consideration in the development of contra-flow plans is the identification of inception and termination points for the corridor. Congestion at these points can significantly reduce the effectiveness of these operations. Effective implementation of these plans includes the deployment of appropriate signage, signals, and barriers as well as the use of CHP and law enforcement personnel. For safety considerations, contra-flow operations should only be performed during daylight hours. In addition, an emergency return lane must also be designated.

If contra-flow operations are used in San Diego County in an evacuation effort, it will be implemented for only small segments of roadways. Each jurisdiction will have the option to use contra-flow on their local roadways; however, the use of contra-flow on the highways will be determined by the OA EOC and County Sheriffs Department, and coordinated with CHP and Caltrans.

Traffic Signal Coordination and Timing

Traffic signal coordination and timing plans are intended to maximize traffic flow in the outbound direction during an evacuation effort. Depending on the extent of the evacuation, coordination may be necessary both locally and regionally to re-time the traffic signal systems. Additionally, it is important to identify the number of non-programmed signals along the evacuation routes. These signals can be plugged into non-centrally programmed traffic signal boxes which will then generate flashing yellow and red lights to help manage traffic.

Individual jurisdictions should determine whether local traffic signals can be controlled from a central location as well as the availability and capability of back-up power sources.

Closure of On and Off-Ramps

Closure of outbound on-ramps on designated evacuation routes will reduce congestion on these roadways resulting from traffic originating at intermediate locations between evacuation origins and destinations. In addition to reducing congestion, closure of outbound on-ramps will also help eliminate entrance queuing. Closure of off-ramps will ensure evacuees remain on designated evacuation routes. These tactics will require coordinated efforts between CHP, Caltrans, local jurisdictions, and other emergency personnel to place and staff barricades at the tops of such ramps throughout the evacuation route.

Intelligent Transportation Systems

Intelligent Transportation Systems include a broad range of technologically based tools that enable transportation and emergency managers to monitor traffic conditions, respond to capacity-reducing events, and provide real-time road conditions. San Diego is equipped with

numerous forms of Intelligent Transportation Systems technologies including roadway electronic surveillance, automatic vehicle location, Changeable Message Signs, and Highway Advisory Radio. These types of technologies provide real-time information to the San Diego Transportation Management Center. The San Diego Transportation Management Center integrates Caltrans Traffic Operations, Caltrans Maintenance, and CHP Communications into a unified, co-located communication and command center. The Transportation Management Center functions to provide communications, surveillance, and computer infrastructure required for coordinated transportation management. Using Intelligent Transportation Systems technologies, the Transportation Management Center can quickly detect, verify, and respond to incidents, such as recommending a different evacuation route due to congestion. Table 4-3 provides a list of Intelligent Transportation Systems technologies that are available in San Diego.

Table 4-3
San Diego Intelligent Transportation Systems Deployment (2005)

Freeway Management	Reported	Total	Percent
Miles under electronic surveillance	238	292	82%
Ramps controlled by ramp meter	277	670	41%
Miles under lane control	30	292	10%
Number of Dynamic Messaging Signs	40	N/A**	N/A**
Miles covered by Highway Advisory Radio	4	292	1%
Incident Management			
Freeway miles under incident detection algorithms	NR*	292	N/A**
Freeway miles under free cell phone call to a dedicated number	NR*	292	N/A**
Freeway miles covered by surveillance cameras (CCTV)	66	292	23%
Freeway miles covered by service patrols	226	292	77%
Arterial miles under incident detection algorithms	0	1137	0%
Arterial miles under free cell phone call to a dedicated number	0	1137	0%
Arterial miles covered by surveillance cameras (CCTV)	5	1137	0%
Arterial miles covered by service patrols	0	1137	0%
Arterial Management			
Signalized intersections covered by electronic surveillance	940	2726	34%
Signalized intersections under centralized or closed loop control	1794	2726	66%
Number of Dynamic Messaging Signs	12	N/A**	N/A**
Arterial miles covered by Highway Advisory Radio	24	1137	2%
Transit Management			
Fixed route buses equipped with Automatic Vehicle Location	238	677	35%
Fixed route buses with electronic real-time monitoring of system components	498	677	74%
Demand responsive vehicles that operate under Computer Aided Dispatch	0	0	0%
Bus stops with electronic display of dynamic traveler information to the public	6	5330	0%
Highway Rail Intersections			
Highway rail intersections under electronic surveillance	12	55	22%
Emergency Management			
Vehicles under Computer Aided Dispatch	1466	1598	92%
Vehicles equipped with on-board navigation capabilities	639	1598	40%
***NR=No Response, **N/A=Not Applicable**			

Source: U.S. Department of Transportation Intelligent Transportation Systems Joint Program Office

Segregation of Pedestrian and Vehicle Traffic

This strategy will designate certain urban roadways as pedestrian only. This will provide separation between vehicles and pedestrians during an evacuation, thus reducing confusion and increasing the efficiency and safety of the evacuation. Some short-notice incidents such as a tsunami emergency, would involve an immediate evacuation on foot versus by vehicle. Resources required to accomplish successful implementation of vehicle/pedestrian separation on evacuation routes will include appropriate signage, signals, barriers; and deployment of emergency management personnel and communications equipment.

Exclusive Bus Routes

This strategy involves the designation of certain lanes within an evacuation route exclusively for buses or other large capacity or high occupancy vehicles. Exclusive bus routes may also be established along alternative evacuation routes. The implementation of this strategy will help support and expedite transportation point operations and can greatly increase the number of people that can be evacuated within a set period of time. This strategy will require coordination between the OA EOC, affected local jurisdictions, law enforcement agencies, and Caltrans.

Phased Evacuation

The purpose of a phased evacuation is to reduce congestion and transportation demand on designated evacuation routes by controlling access to evacuation routes in stages and sections. This strategy can also be used to prioritize the evacuation of certain communities that are in proximity to the immediate danger. A phased evacuation effort will need to be enforced by law enforcement agencies and coordinated with the OA EOC and affected jurisdictions.

Phased Release of Parking Facilities

The coordinated release of vehicles from parking facilities will reduce the number of vehicles on evacuation routes. To implement this strategy, parking facilities will be inventoried and categorized according to size, location, or other relevant factors. Additionally, public resources will be allocated to coordinate logistics and to enforce compliance with phased release protocol. This tactic may cause evacuees to use public transportation rather than privately owned vehicles.

Use of Designated Markings

Designated markings and signs will play a key role in accomplishing a safe and efficient evacuation. Signs, flags, and other markings can be used to provide guidance and information to evacuees en-route.

Road Barriers

Road barriers will be used in conjunction with other transportation strategies to ensure evacuees remain on designated evacuation routes or are blocked from entering closed areas.

San Diego Freeway Patrol Service

Caltrans, CHP, and the San Diego Association of Governments operate the San Diego Freeway Patrol Service which can be used during an evacuation effort to provide services to disabled vehicles including changing tires, jump-starting vehicles, providing gas, or towing vehicles. The Freeway Patrol Service has a fleet of 25 tow trucks and seven light-duty pickup trucks.

Communication Considerations

It is essential that accurate and timely information is provided to evacuees en-route during an evacuation effort. Evacuees must be provided real-time information updates regarding road conditions, evacuation routes, availability of shelters, evacuation times, and other vital information. Travel and evacuation information can be provided through 5-1-1 and 2-1-1 telephone systems, emergency broadcast radio, and dynamic messaging signs, such as Changeable Message Signs. It is also recommended that local jurisdictions consider posting signs along major evacuation transportation corridors that provide information about emergency numbers or radio stations that can be used during an emergency. KOGO 600AM and KLSD 1360 AM radio stations will function as the primary and secondary local radio stations that broadcast emergency information to the public.

If evacuation of public schools is required, students will normally be transported on school buses to other schools outside the risk area. It is essential that the public is provided timely information on where parents can pick up their children and the security procedures that are in place to ensure their protection. In addition, it is assumed that transportation arrangements can be made with hotels/motels for the evacuation of tourists.

Evacuation of Special Needs Populations

It is critical that modes of available transportation are identified that can help evacuate people with disabilities during an emergency. Transportation that can accommodate personnel in wheelchairs, scooters, or other mobility aids needs to be made available. Some potential options can be the use of lift-equipped school buses or vans. People that are blind or have poor vision will also need additional assistance because they can no longer rely on their traditional orientation and navigation methods. Buses will most likely be the primary resources used to evacuate special needs populations. Each bus can accommodate two wheelchairs. It is also essential that local jurisdictions establish and maintain working relationships with public and private agencies that serve the transportation-dependent populations.

County Health and Human Services Agency determined that there are approximately 25,000 non-ambulatory people in the San Diego region who live at home and will potentially require transportation assistance during an evacuation effort, there are approximately 20,000 people in the region who require in-home support, 700 of which are considered to be on the more critical list. County OES also has a list of licensed care and in-home support facilities in the region. Local jurisdictions will need to evaluate how many of these people live within their boundaries. It is also important to note that many of the special needs populations will not be able to reach the designated transportation points. Jurisdictions must identify how these situations will be handled and the types of vehicles and equipment that will be required.

Specialized facilities such as hospitals, nursing homes, and correctional facilities are required to have their own respective evacuation plans and procedures that will be followed during an incident. Jurisdictions in the OA must ensure that the MOUs/MOAs and private transportation contracts established by jurisdictions are not duplicated and don’t rely on the same exact transportation resources as other jurisdictions and organizations.

In addition, people that are rescued following an incident will also have to be transported to evacuation points.

Evacuation of Animals

Ensuring for the transportation, care, and sheltering of animals is an important factor in evacuation planning. Many people will refuse to evacuate their homes if they cannot take their pets with them. It is estimated that up to 25 percent of pet owners will completely fail to evacuate because of their animals. Furthermore, about 30-50 percent of pet owners will leave pets behind; and approximately 50-70 percent of those individuals who leave animals behind, will attempt to re-enter an evacuated site to rescue their animals. Therefore, it is imperative that evacuation plans address pet evacuation and sheltering procedures to protect both human and animal health and safety.

Due to the lessons learned from Hurricane Katrina, the Pets Evacuation and Transportation Standards Act of 2006 was established which amends the Stafford Act, and requires evacuation plans to take into account the needs of individuals with household pets and service animals, prior to, during, and following a major disaster or emergency.

The County Department of Animal Services has plans in place to transport and shelter pets in a disaster under Annex O of the Operational Area Emergency Plan including the Animal Control Mutual Aid Agreement. Animal Control Officers, San Diego Humane Society, and private animal care shelters will assist in the rescue, transport, and sheltering of small and large animals. Only non-emergency resources and personnel, such as public and private animal services agencies, will be used to rescue and transport animals during an evacuation effort.

It is assumed that residents that have their own means of transportation will evacuate with their small household pets. Residents that do not have access to vehicles will need to secure their pets in cages or carriers as they arrive at the transportation points. Animal Control Officers will work with animal services agencies and volunteers to develop an animal tracking methodology. If these residents do not have the required cages or carriers, they will be asked to secure their animals in their homes. This strategy places responsibility upon individual owners and will require a public education component that informs the public that carriers, cages, or trailers will be required for pet evacuations and recommends that pet owners microchip their animals for identification purposes. It is recognized that owners may refuse to evacuate their homes if they are required to leave their pets behind. Individual jurisdictions will need to identify strategies to address pet evacuations.

Jurisdictions must not assume that owners will have their own means of transporting large animals, such as trailers. The Humane Society and County Animal Services will provide support with the transportation of large animals. MOUs need to be formalized with other agencies/organizations for the transportation of large animals, such as horses. In addition, potential volunteer resources and private groups should be identified and tracked in WebEOC. Jurisdictions can also:

A. Provide pet owners information of nearby kennels, animal shelters, and veterinary clinics that may be able to be temporary shelter pets.

B. Set up temporary pet shelters at fairgrounds, parks, and other similar facilities.

If local resources become overwhelmed during the disaster response, the OA EOC will request assistance through the Regional EOC from the California Department of Food and Agriculture, the lead agency for California Animal Response Emergency System. If necessary, the California Department of Food and Agriculture will coordinate requests for Federal assistance.

The California Animal Response Emergency System participants will activate and respond to animal rescue, emergency care and shelter, veterinary care, and general assistance for animals, at or near the facilities sheltering and caring for people.

Pet Estimates

The scope of animals addressed in the plan is based upon the California Animal Response Emergency System definition. The California Animal Response Emergency System defines "animals" as "*commercial livestock, companion animals, exotic pets, and restricted species*" and further defines these terms as follows:

Livestock: Any cattle, sheep, swine, goat, or any horse, mule, or other equine whether live or dead.

Pet Animal: Any household animal including, but not limited to, cats, dogs, or other carnivores whether or not for public exhibition.

Restricted Species: Any animal requiring a license or permit from the Department of Fish and Game.

Service Animals: Animals specifically trained to guide, signal, or assist people with disabilities or special needs.

Based on U.S. standards and formulas provided by the California County Animal Disaster Preparedness and Response Guide (January 1999), OA pet estimates are provided in Table 4-4 below.

Table 4-4
OA Pet Estimates

	Households with Pets (%)	Average Number of Animals per Household	San Diego Pet Estimates*
Dogs	31.6	1.69	594,497
Cats	27.3	2.19	665,553
Birds	4.6	2.74	140,309
Other pets	10.7	N/A	12,113
Total	N/A	N/A	1,457,056

* Based on a household estimate of 1,113,207

To provide further information on potential pet evacuation requirements, Table 4-5 on the following page provides estimates for the number of animals in selected jurisdictions within the San Diego OA.

Some additional information related to animal evacuations includes the following:

1. Approximately 3,000 large animals (horses and livestock) were rescued by Animal Services during the Cedar Fires in 2003.
2. Approximately 27,000 cows exist in San Diego County (2005 data).
3. The San Diego Zoo and Wild Animal Park are home to approximately 7,000 rare and endangered animals.
4. Disposing of dead animals requires additional considerations due to the fact that as carcasses decompose, materials are released that can contaminate the environment or cause diseases.

Table 4-5
Pets Estimates by Jurisdiction

	# of Households*	Dogs	Cats	Birds	Other pets
Carlsbad	36,709	19,604	21,947	4,627	495
Chula Vista	71,438	38,151	42,711	9,004	963
Coronado	10,861	5,756	6,516	1,412	109
Del Mar	2,128	1,136	1,272	268	228
El Cajon	32,220	17,207	19,263	4,061	3,448
Encinitas	22,830	12,192	13,649	2,877	2,443
Escondido	43,599	23,284	26,067	5,495	4,665
Imperial Beach	9,272	4,952	5,543	1,169	992
La Mesa	24,186	12,916	14,460	3,048	2,588
Lemon Grove	8,559	4,571	5,117	1,079	916
National City	15,018	8,020	8,979	1,893	1,607
Oceanside	58,608	31,299	35,040	7,387	6,271
Poway	15,467	8,260	9,247	1,949	1,655
San Diego	466,579	249,172	278,954	58,808	49,924
San Marcos	24,573	13,123	14,691	3,097	2,629
Santee	18,470	9,864	11,043	2,328	1,976
Solana Beach	5,673	3,030	3,392	715	607
Vista	28,066	14,988	16,780	3,537	3,003

** Household estimates for Carlsbad, Chula Vista, El Cajon, Escondido, Oceanside, San Diego, San Marcos, and Vista are based on 2005 U.S. Census Bureau estimates of number of households. Household estimates for Del Mar, Encinitas, Imperial Beach, La Mesa, Lemon Grove, National City, Poway, Santee, and Solana Beach are based on 2000 U.S. Census Bureau estimates of number of households (the latest data available). Household and pet estimates for Coronado were provided by the City of Coronado Fire Department.*

Hazard-Specific Considerations

Figures 4-1 through 4-5 illustrate the major hazards addressed in this Annex and the primary evacuation routes that should be used for an evacuation effort. Hazard specific transportation considerations for each hazard are provided below.

Dam Failure:
Due to the short-notice of a dam inundation incident, evacuation of the public to areas of safety may best be conducted by foot.

Sections of the identified primary evacuation routes may become inundated with water and washed out (see Figures 4-1A and B). Emergency personnel will need to access the feasibility of these roads to determine if alternative evacuation routes need to be identified.

Earthquake:
An earthquake incident has the potential to cause considerable damage to transportation infrastructure. Emergency response personnel, in coordination with Public Works, will need to assess damage to bridges, overpasses, elevated roadways, utility lines, and roadways before safe evacuation routes can be identified and relayed to the public.

An earthquake incident has the potential to significantly impair San Diego's regional transportation system, requiring major evacuation route diversions, and implementation of numerous transportation management and operational strategies and technologies (see Figure 4-2).

A major earthquake along the Rose Canyon fault would potentially shut down Lindbergh Field (San Diego International Airport). Montgomery and Brown Fields would have limited capabilities to support the delivery of supplies and materials from outside of the OA. MCAS Miramar could be utilized to coordinate federal/state support, if necessary.

Flood (100 Year):
The public must be informed that they should not attempt to drive through moving flood water on roadways. Most vehicles can be swept away by less than two feet of moving water.

The public should also be informed to avoid walking through floodwaters. People can be swept away by as little as two-inches of moving water.

Due to the ubiquitous geographic locations of flood hazards in San Diego County, as well as the nature of flooding to exacerbate quickly, based on a fast rising flood hazard, the public may be advised to evacuate to higher ground by foot, if it is more efficient than by vehicle.

Sections of the identified primary evacuations routes may become inundated with water and washed out (see Figures 4-3A and B). Emergency personnel will need to access the feasibility of these roads to determine if alternative evacuation routes need to be identified.

There is a possibility that flooding may trap people within danger zones. Emergency personnel will need to rescue these people using boats or helicopters. Zodiacs and flat-bottom bass boats

are the best resources to use for flood rescue. Some of the cities within the OA have River Rescue Teams, including:

A. City of San Diego

B. City of Del Mar

C. City of Encinitas

D. City of Oceanside

E. City of Chula Vista

Some of the cities within the OA have Swiftwater Rescue Teams, as well.

Tsunami:

Based on traffic conditions and the short-notice of a tsunami incident, the most efficient way to conduct an evacuation effort may be by foot. Evacuees need to evacuate two miles inland from the coast or 100 feet above sea level to reach a safe zone.

Sections of the primary evacuations routes may become inundated with water and washed out (see Figure 4-4). Emergency personnel will need to access the feasibility of these roads to determine if alternative evacuation routes need to be identified.

Wildfire/Structural Fire:

Although the majority of wildfire hazards are located in the eastern section of the county, this area only represents a small portion of the overall population (see Figures 4-5A and B).

Routes 67, 76, 78, and 79 are some of the primary evacuation routes for east county populations. It is important to note that these roadways decrease in lanes in certain segments, resulting in a reduction in traffic capacity, and leading to potential bottle necking and an increased evacuation time.

Smoke from large wildfires can significantly reduce visibility over a wide area, resulting in reduced speed limits, roadway closures, and evacuation route diversions. Poor visibility may also require the use of pilot cars to direct traffic.

Terrorism:

Based on the type of terrorist event, emergency responders may need to conduct a damage assessment of transportation infrastructure.

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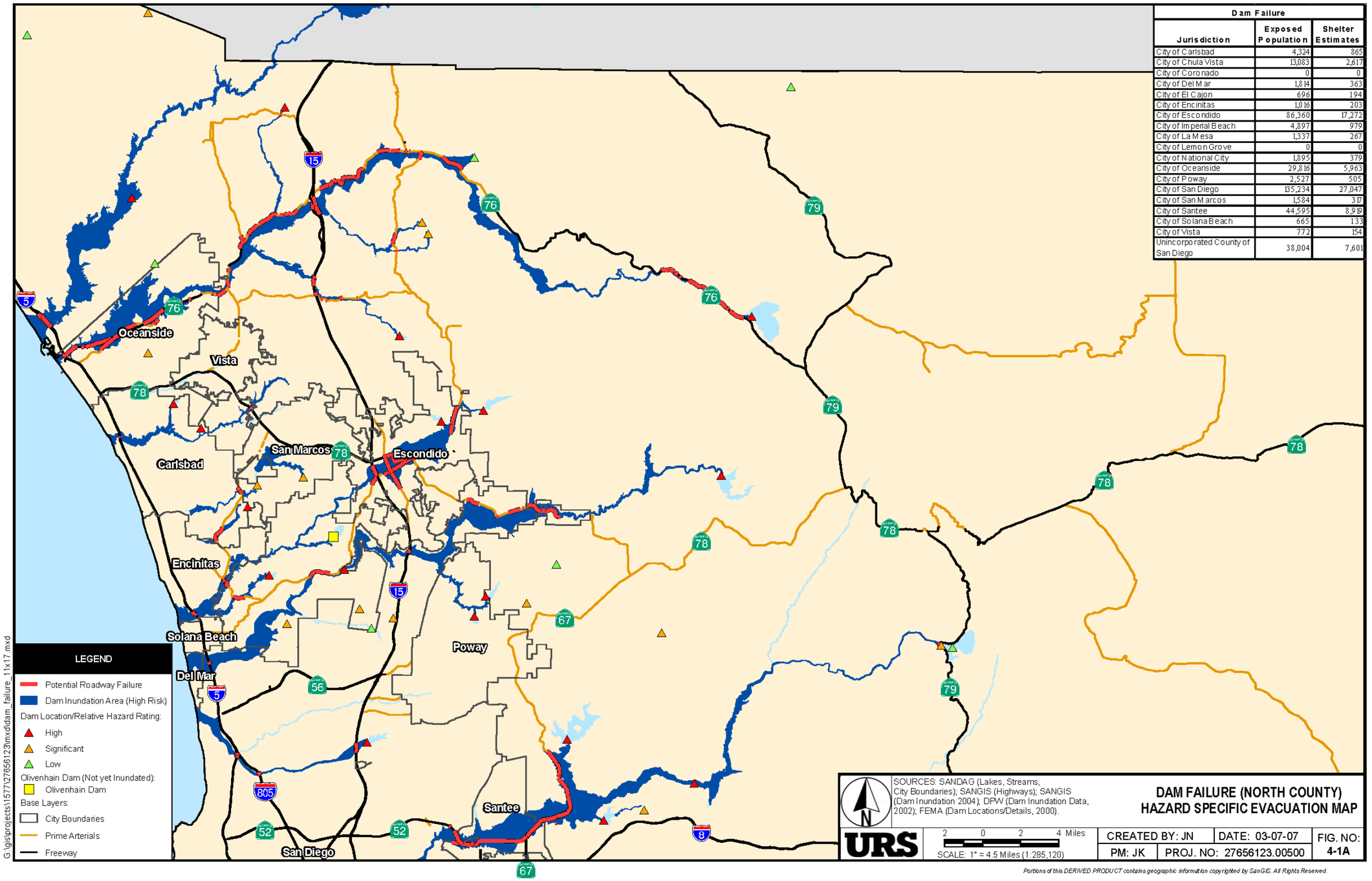
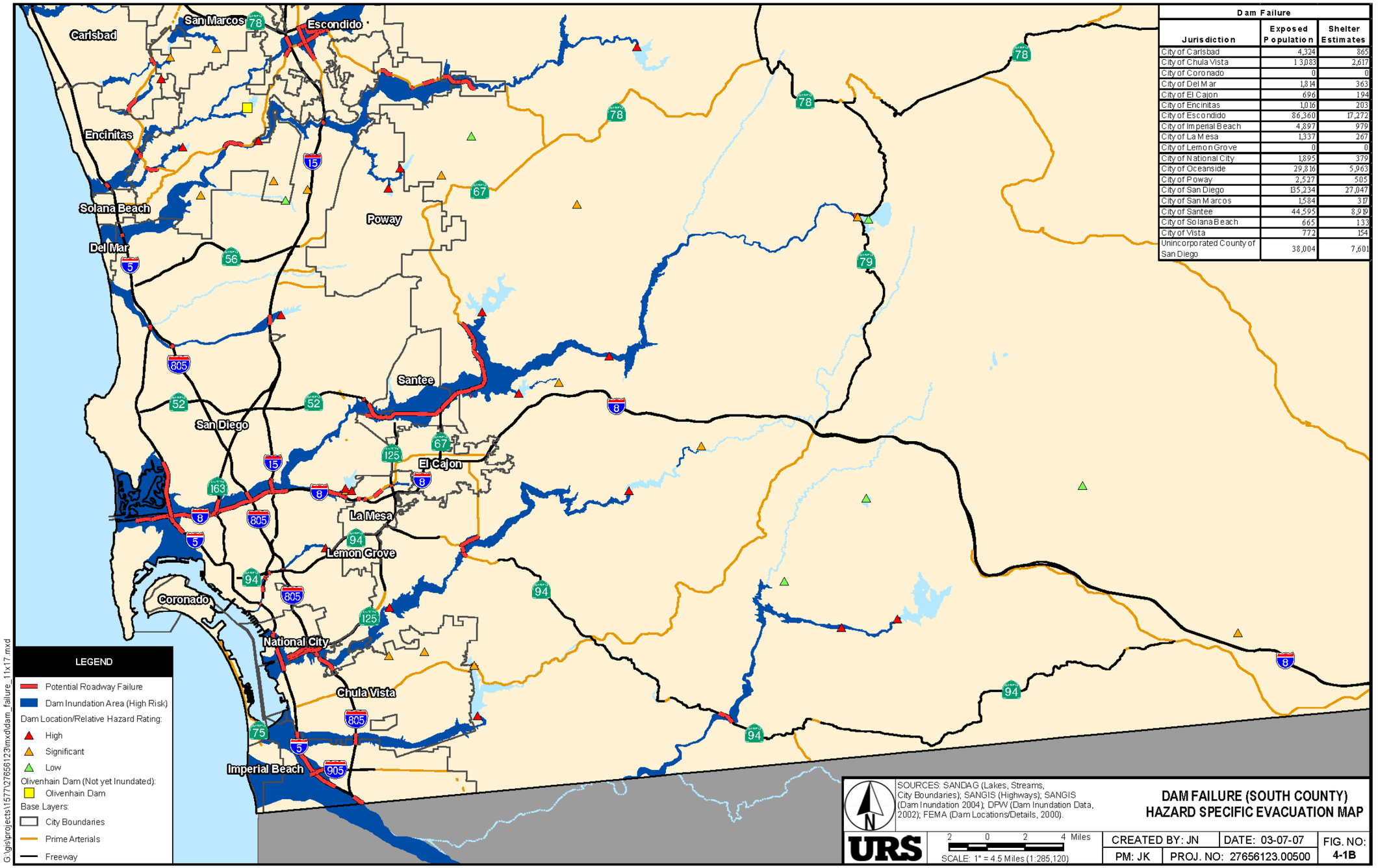
Figure 4-1A



Dam Failure		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	4,324	865
City of Chula Vista	13,083	2,617
City of Coronado	0	0
City of Del Mar	1,814	363
City of El Cajon	696	194
City of Encinitas	1,016	203
City of Escondido	86,360	17,272
City of Imperial Beach	4,897	979
City of La Mesa	1,337	267
City of Lemon Grove	0	0
City of National City	1,895	379
City of Oceanside	29,816	5,963
City of Poway	2,527	505
City of San Diego	135,234	27,047
City of San Marcos	1,584	317
City of Santee	44,595	8,919
City of Solana Beach	665	133
City of Vista	772	154
Unincorporated County of San Diego	38,004	7,601

Figure 4-1B



Dam Failure		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	4,324	865
City of Chula Vista	13,083	2,617
City of Coronado	0	0
City of Del Mar	1,814	363
City of El Cajon	696	194
City of Encinitas	1,016	203
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City of Imperial Beach	4,897	979
City of La Mesa	1,337	267
City of Lemon Grove	0	0
City of National City	1,895	379
City of Oceanside	29,816	5,963
City of Poway	2,527	505
City of San Diego	135,234	27,047
City of San Marcos	1,584	317
City of Santee	44,595	8,919
City of Solana Beach	665	133
City of Vista	772	154
Unincorporated County of San Diego	38,004	7,601

SOURCES: SANDAG (Lakes, Streams, City Boundaries); SANGIS (Highways); SANGIS (Dam Inundation 2004); DPW (Dam Inundation Data, 2002); FEMA (Dam Locations/Details, 2000).

URS

2 0 2 4 Miles
SCALE: 1" = 4.5 Miles (1:285,120)

DAM FAILURE (SOUTH COUNTY)
HAZARD SPECIFIC EVACUATION MAP

CREATED BY: JN	DATE: 03-07-07	FIG. NO: 4-1B
PM: JK	PROJ. NO: 27656123.00500	

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Figure 4-2

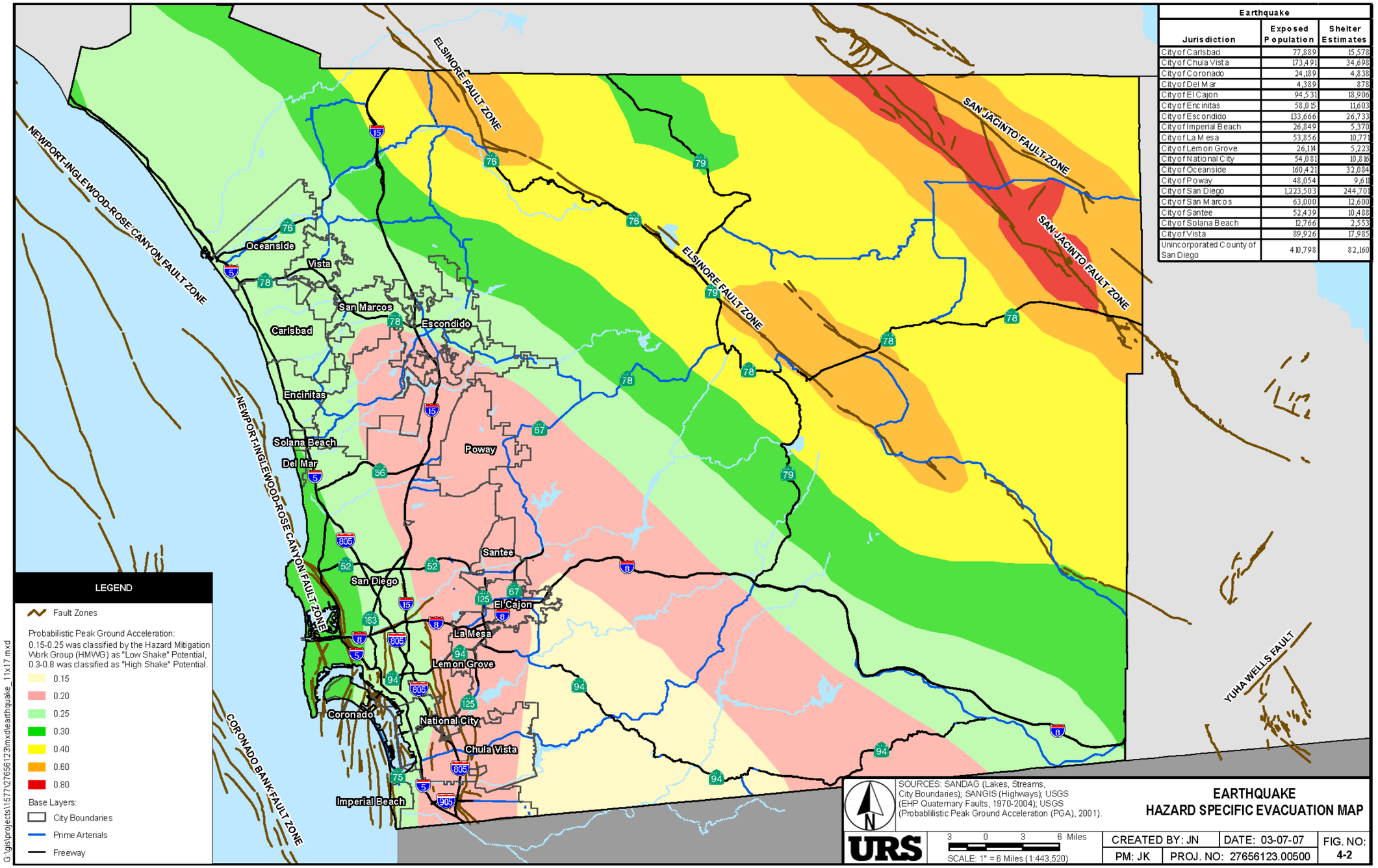

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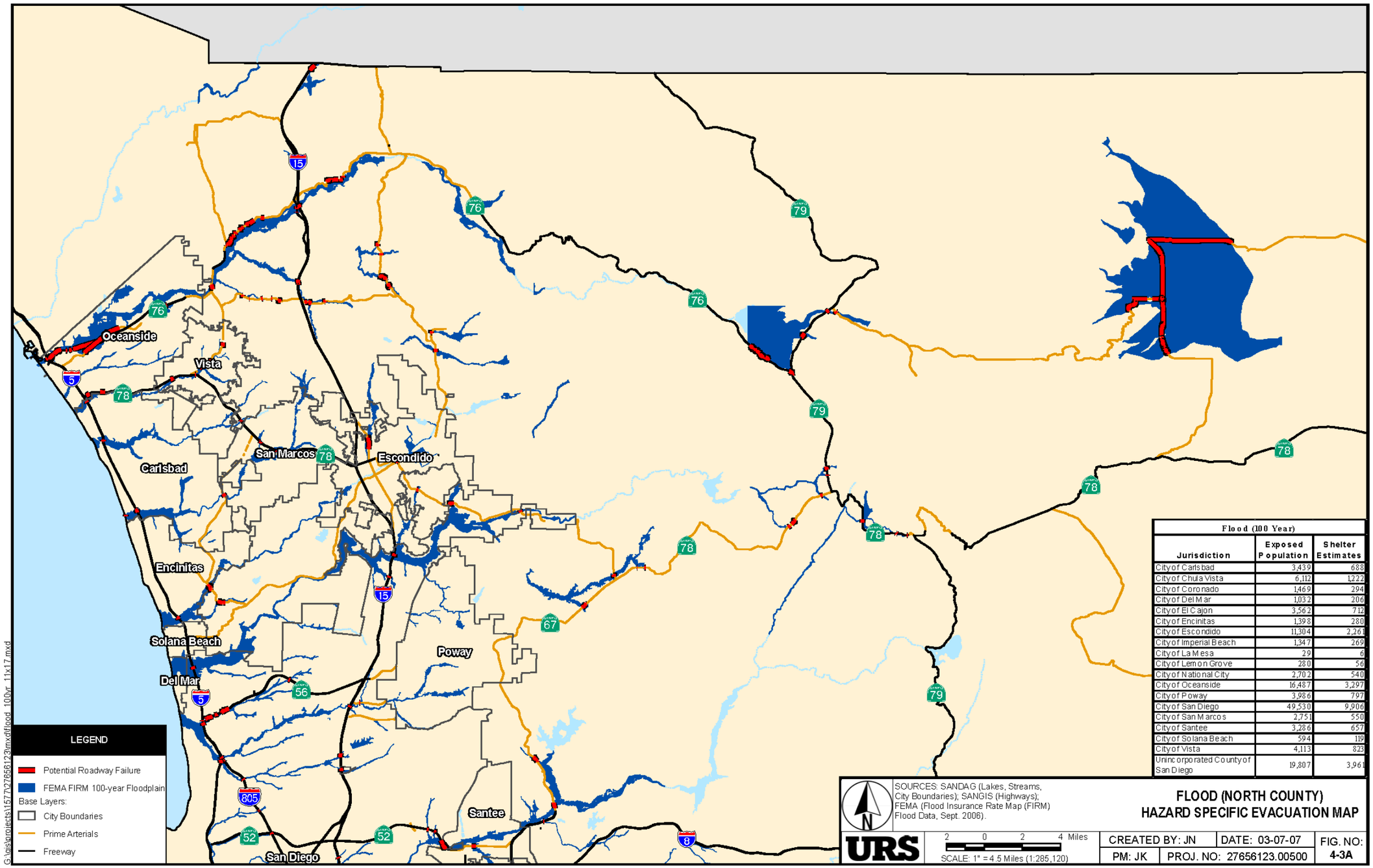
Figure 4-3A



Flood (100 Year)		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	3,439	688
City of Chula Vista	6,112	1,222
City of Coronado	1,469	294
City of Del Mar	1,032	206
City of El Cajon	3,562	712
City of Encinitas	1,398	280
City of Escondido	11,304	2,261
City of Imperial Beach	1,347	269
City of La Mesa	29	6
City of Lemon Grove	280	56
City of National City	2,702	540
City of Oceanside	16,487	3,297
City of Poway	3,986	797
City of San Diego	49,530	9,906
City of San Marcos	2,751	550
City of Santee	3,286	657
City of Solana Beach	594	119
City of Vista	4,113	823
Unincorporated County of San Diego	19,807	3,961

SOURCES: SANDAG (Lakes, Streams, City Boundaries); SANGIS (Highways); FEMA (Flood Insurance Rate Map (FIRM) Flood Data, Sept. 2006).

FLOOD (NORTH COUNTY) HAZARD SPECIFIC EVACUATION MAP

URS

2 0 2 4 Miles

SCALE: 1" = 4.5 Miles (1:285,120)

CREATED BY: JN	DATE: 03-07-07	FIG. NO: 4-3A
PM: JK	PROJ. NO: 27656123.00500	

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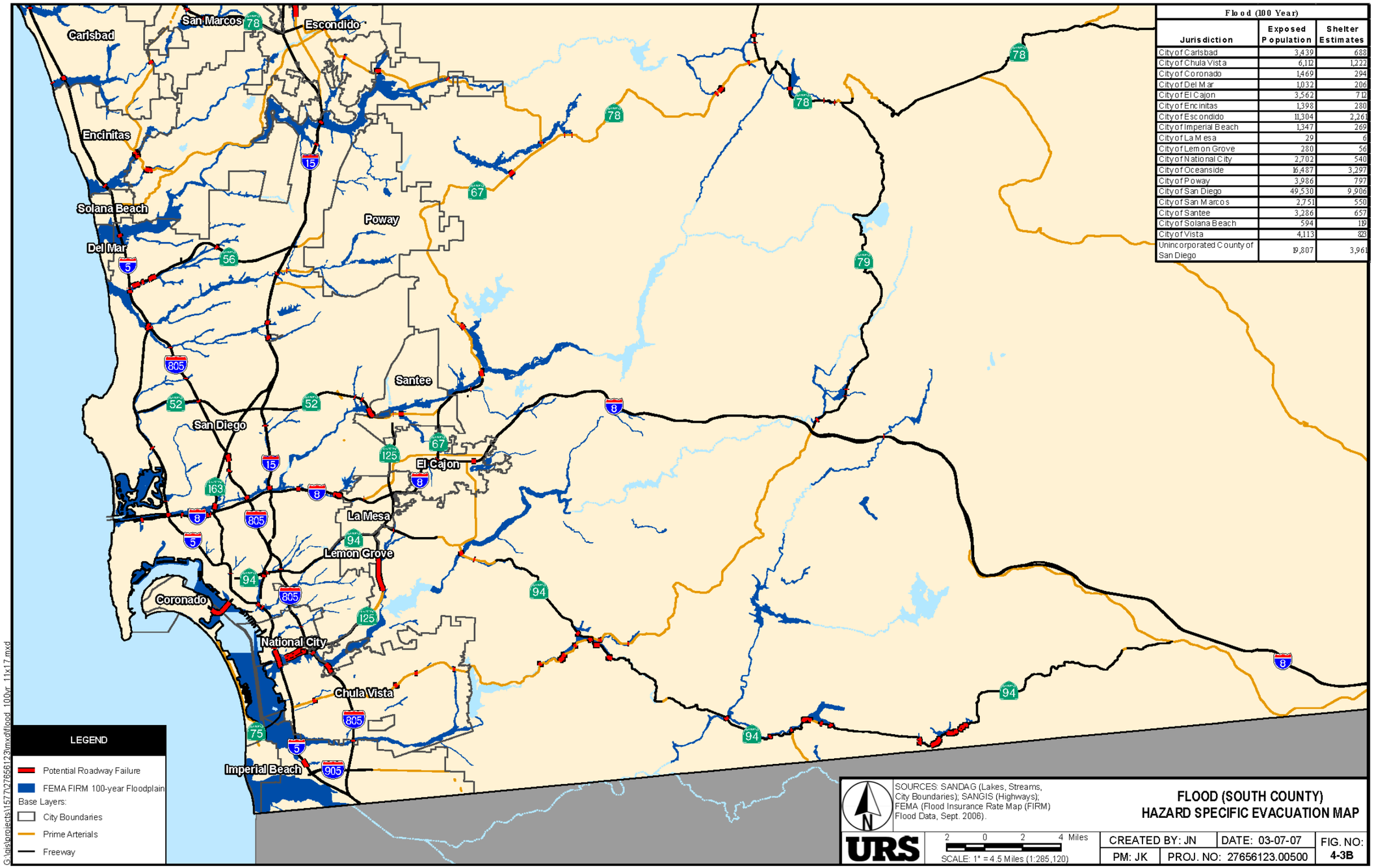
Figure 4-3B



Flood (100 Year)		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	3,439	688
City of Chula Vista	6,112	1,222
City of Coronado	1,469	294
City of Del Mar	1,032	206
City of El Cajon	3,562	712
City of Encinitas	1,398	280
City of Escondido	11,304	2,261
City of Imperial Beach	1,347	269
City of La Mesa	29	6
City of Lemon Grove	280	56
City of National City	2,702	540
City of Oceanside	16,487	3,297
City of Poway	3,986	797
City of San Diego	49,530	9,906
City of San Marcos	2,751	550
City of Santee	3,286	657
City of Solana Beach	594	119
City of Vista	4,113	823
Unincorporated County of San Diego	19,807	3,961

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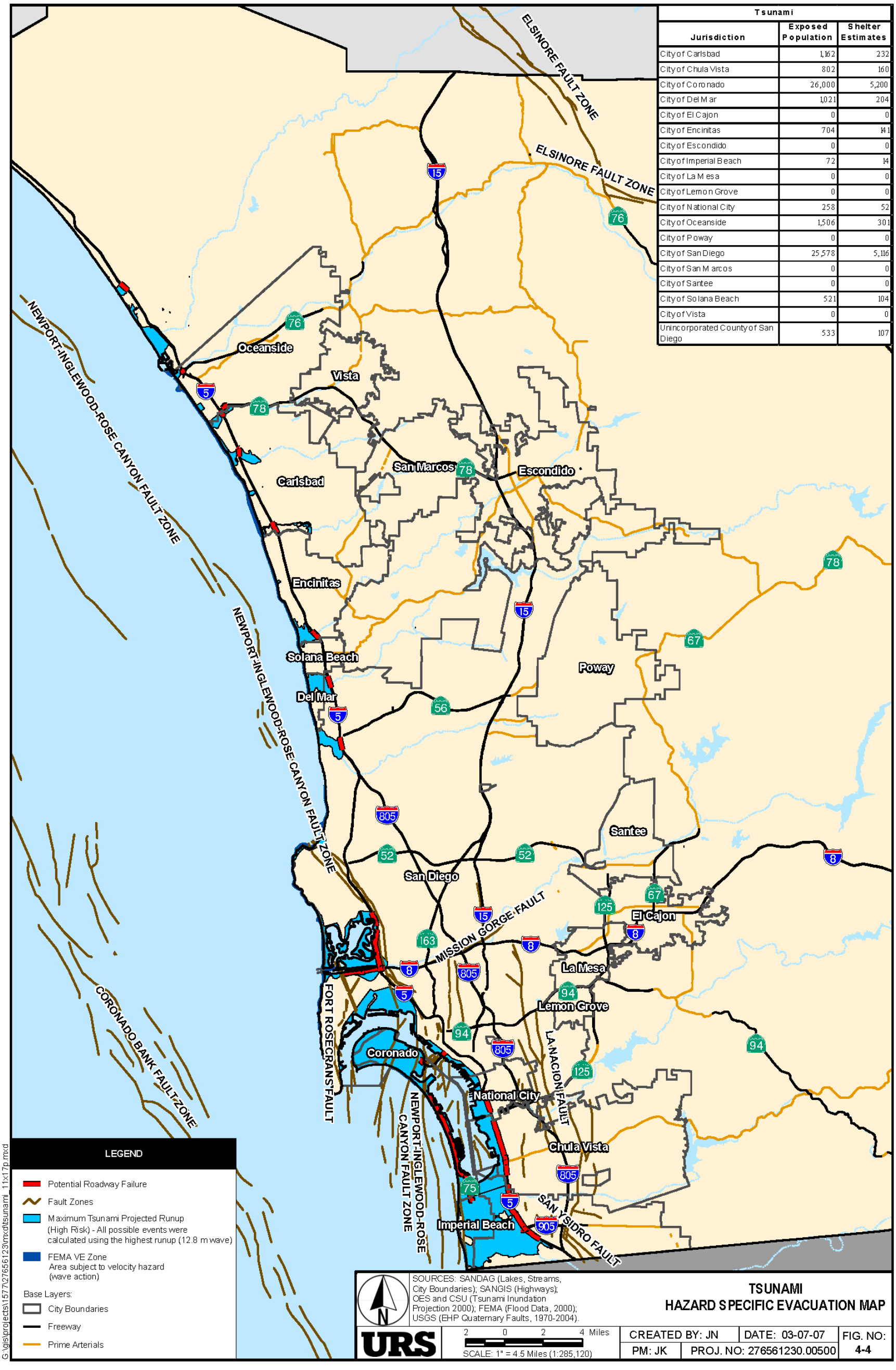
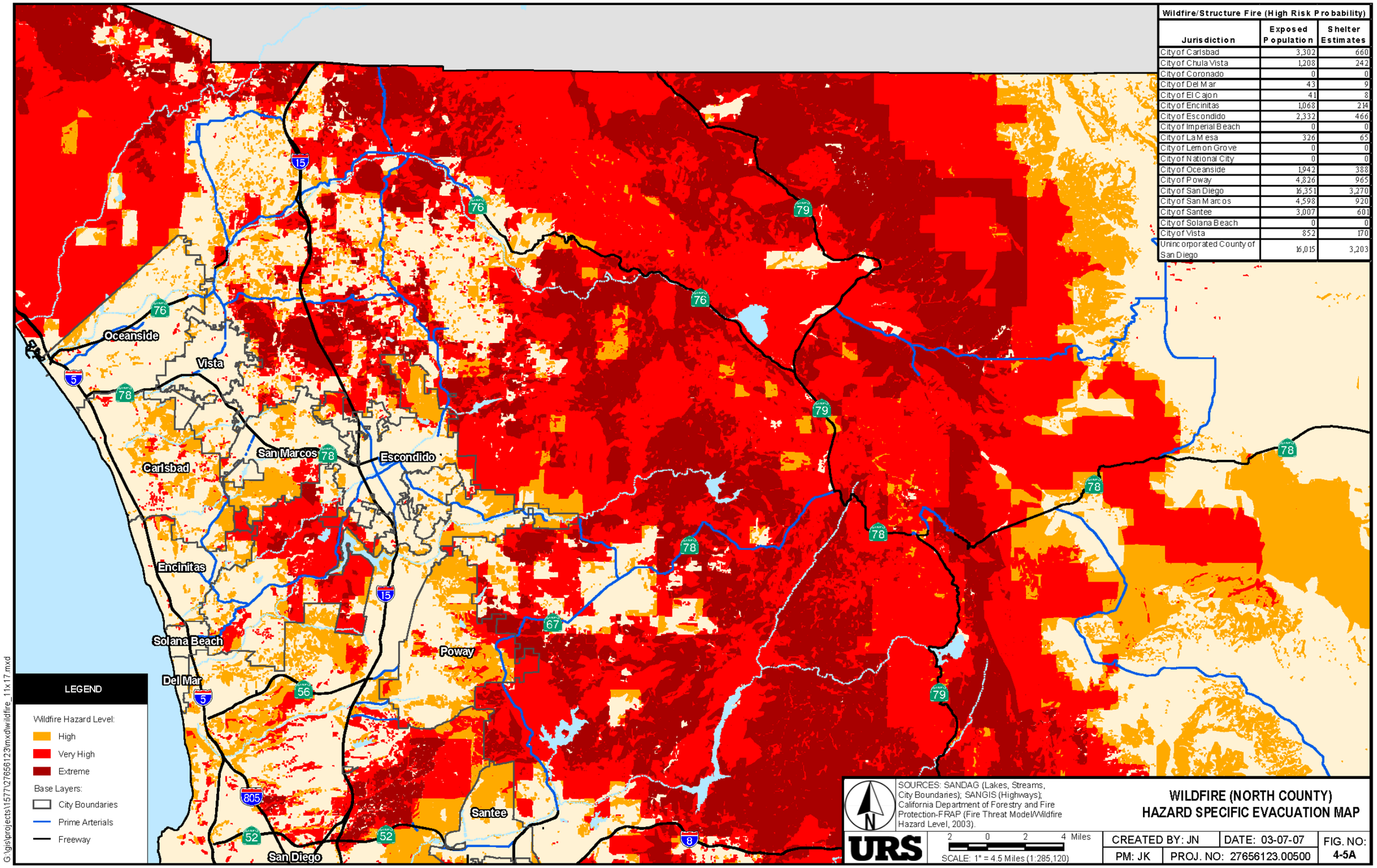
Figure 4-4



Tsunami		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	1,162	232
City of Chula Vista	802	160
City of Coronado	26,000	5,200
City of Del Mar	1,021	204
City of El Cajon	0	0
City of Encinitas	704	141
City of Escondido	0	0
City of Imperial Beach	72	14
City of La Mesa	0	0
City of Lemon Grove	0	0
City of National City	258	52
City of Oceanside	1,506	301
City of Poway	0	0
City of San Diego	25,578	5,116
City of San Marcos	0	0
City of Santee	0	0
City of Solana Beach	521	104
City of Vista	0	0
Unincorporated County of San Diego	533	107

Figure 4-5A



Wildfire/Structure Fire (High Risk Probability)		
Jurisdiction	Exposed Population	Shelter Estimates
City of Carlsbad	3,302	660
City of Chula Vista	1,208	242
City of Coronado	0	0
City of Del Mar	43	9
City of El Cajon	41	8
City of Encinitas	1,068	214
City of Escondido	2,332	466
City of Imperial Beach	0	0
City of La Mesa	326	65
City of Lemon Grove	0	0
City of National City	0	0
City of Oceanside	1,942	388
City of Poway	4,826	965
City of San Diego	16,351	3,270
City of San Marcos	4,598	920
City of Santee	3,007	601
City of Solana Beach	0	0
City of Vista	852	170
Unincorporated County of San Diego	16,015	3,203

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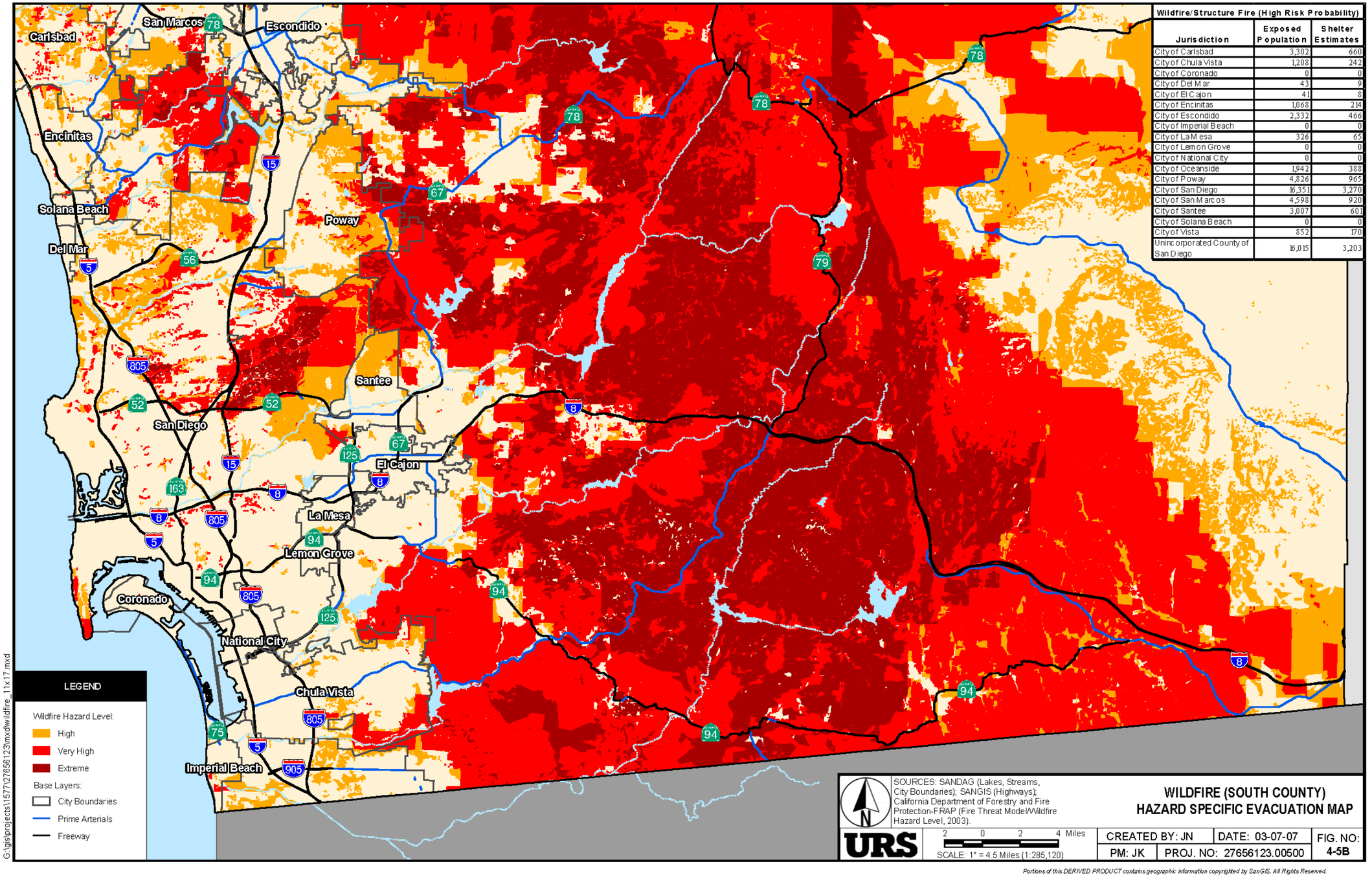
Figure 4-5B



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VI. Sheltering Considerations

Shelter will initially be provided to evacuees through the establishment of evacuation points. These evacuation points will serve as temporary safe zones for evacuees and will provide basic needs such as food, water, and restrooms.

In the event that it is determined that mass care is required, Annex G: Care and Shelter Operations of the Operational Area Emergency Plan will be activated. The American Red Cross will provide the bulk of mass care facilities. The American Red Cross has MOAs established with approximately 670 sites within the OA for shelters. With mutual aid, the American Red Cross can provide shelter to approximately 70,000 people in San Diego County. Some evacuation points may also be converted into shelter locations if necessary.

Shelters must be able to meet the basic needs for their designated maximum capacity. This includes but is not limited to:

- Restrooms/Showers
- Beds/Cots
- Food/Water
- Blankets
- Toiletries
- First Aid

Evacuees will not be permitted to enter shelters if they are carrying weapons, illegal drugs, or alcohol.

During a disaster, all County of San Diego employees are considered to be Disaster Service Workers and may be asked to fulfill duties outside the scope of their normal job functions. In order to augment the resources of the American Red Cross, the County has implemented the County Shelter Team Program. This Program will utilize County employees as Disaster Service Workers to fulfill the need of sheltering the residents in San Diego County when needed. County OES has trained County employees in sheltering procedures to be part of the County Shelter Team Program. This Program will be implemented when the resources of the San Diego/Imperial Counties Chapter of the American Red Cross are exhausted, or a population that requires services that general population shelters cannot provide, require sheltering.

Jurisdictions should also consider establishing specific shelters for Disaster Service Workers and their families so these responders can concentrate on their work and not have to worry about family members.

Special Needs Populations Sheltering

There are no shelters in San Diego County that are designated explicitly for special needs populations. Per Annex G of the Operational Area Emergency Plan, the Director of Health and Human Services will serve as the Care and Shelter Branch Coordinator in the OA EOC and will

ensure that specialized services are provided as required to special needs populations. Shelters will need to accommodate people that require medications, especially certain types of insulin that require refrigeration, and for people who rely on life-support systems or other devices that require power to operate. These shelters must be equipped with back-up generators for power supply and have refrigeration capabilities.

All shelters should be Americans with Disabilities Act compliant throughout the facility to ensure that persons with disabilities can access all amenities. All potential shelter sites should be assessed for parking, accessibility, and restroom accommodations to determine if these sites are Americans with Disabilities Act compliant.

County OES has developed specific sheltering/medical and transportation plans for unaccompanied minors, medically fragile individuals, and those that require additional assistance that can not be provided at general shelters.

Animal Sheltering

Procedures to shelter animals in a disaster are outlined under Annex O of the Operational Area Emergency Plan. The County Department of Animal Services is the lead agency in a disaster of any kind involving animals. Animal Control Officers, San Diego Humane Society, and private animal care shelters will assist in the sheltering of small and large animals. Animal Services has three animal shelters located in Carlsbad, San Diego, and Bonita. Animals will be either accommodated at each shelter as they arrive on site or relocated to alternate shelters. Service animals are not considered pets and will be accommodated at general shelters.

Animal Services will also coordinate the procurement and dissemination of animal feed and supplies to the sheltered animals. Jurisdictions should work with local and regional agencies to identify shelter and confinement resources, animal food and water sources, and supplies.

The American Red Cross has an MOU with the City of San Diego Humane Society for support with animal sheltering. American Red Cross plans to use this MOU to establish similar MOUs within other jurisdictions as well as with County Animal Services.

Regional Shelter Capacities

Table 5-1 illustrates potential American Red Cross shelter capacities by zip code within the OA. These shelters only represent potential sites that may be activated during an evacuation. During an emergency, it is probable that other unofficial shelters will be activated by faith-based organizations and other public and private agencies. Jurisdictions should recommend that residents work with authorities to identify shelter locations.

In a large event, spontaneous or non-traditional shelters are likely to appear in the OA. Spontaneous shelters are sites that are not requested or physically supported by the American Red Cross, OA, or local jurisdictions. Moreover, the OA may not be aware that these shelters are in operation. The spontaneous shelters may be operated by volunteer organizations that may not be known to response agencies or formally established. The shelter organizations can manage and equip the shelter on their own or may request support from the OA and the

American Red Cross. When a spontaneous shelter receives operational support from the American Red Cross or the OA, it becomes a government-sanctioned shelter. As such, it must follow the guidance and information needs of the OA, including adherence to operating policies and procedures, providing standardized services, and submitting daily status reports.

Table 5-1
Regional Shelter Capacities

Zip Code	Shelter Capacity
91901	347
91905	3
91906	95
91910	479
91911	313
91916	90
91935	187
91941	606
91942	56
91945	100
91950	497
91962	240
91963	53
91978	395
91977	2,063
92004	100
92007	26
92008	794
92009	75
92010	249
92011	76
92019	617
92020	2,142
92021	925
92024	250
92025	1,139
92026	501
92027	2,354
92028	867
92029	93

Zip Code	Shelter Capacity
92037	1,189
92054	202
92056	387
92057	371
92060	97
92064	1,901
92065	452
92067	337
92071	6,134
92069	1,197
92075	211
92078	250
92081	500
92082	850
92083	337
92084	1,499
92086	325
92091	112
92093	1,750
92101	1,486
92102	672
92103	1,041
92104	358
92105	548
92106	993
92107	416
92109	903
92110	359
92111	1,230
92113	1,876

Zip Code	Shelter Capacity
92114	1,755
92115	829
92117	1,693
92118	1,151
92119	589
92120	1,041
92122	1,097
92123	1,172
92124	1,603
92126	888
92127	502
92128	724
92129	1,044
92130	185
92131	346
92139	731
92154	1,314
92173	508
TOTAL CAPACITY: 61,102	

FEMA Long-Term Housing Assistance

In declared disasters and emergencies, short and long-term housing assistance from FEMA may be available.

Temporary Housing Assistance

Temporary Housing Assistance is provided when a FEMA assistance applicant's home is destroyed or damaged so badly that it cannot be lived in and there is insufficient insurance to meet the need for housing. Temporary rental assistance, grants to replace destroyed homes and repair grants are included in this type of assistance.

Rental Assistance

Rental assistance grants are provided by FEMA to homeowners and renters to temporarily rent another place while repairs are made to their home or while they are looking for another place to live. Applicants' damaged homes must be inspected to determine if they are eligible for rental assistance grants. Rental assistance grants may be used to pay for renting an apartment or house, or for staying in a hotel or motel. In areas where no housing is available to rent, alternative forms of housing, such as travel trailers or mobile homes, may be provided.

Repair Grants

Underinsured disaster victims may be eligible for grants to cover labor and material costs for home repairs to make the home safe to live in. Typical types of repairs covered include: roof, electrical system, and windows and doors. FEMA assistance covers minimal repairs. Low-interest disaster loans from the U.S. Small Business Administration are the source of funding for repairs to restore victims' houses to pre-disaster condition.

Communication Considerations

The OA EOC and impacted EOCs must be constantly aware of shelter requirements and capacities throughout the region. The American Red Cross shelter managers will inform their Disaster Operations Center about shelter capacities. The Disaster Operations Center will relay this information to the American Red Cross Liaison in the OA EOC, who will then convey this information to the Information and Intelligence Section, other EOCs, and the Joint Information Center.

Evacuees will be provided updated shelter information en-route through emergency radio broadcasts, messaging boards along the evacuation routes, and 2-1-1 informational lines.

Shelter personnel must ensure they are able to communicate with special needs populations including people who are deaf; deaf-blind or hard of hearing; blind or have low vision; or have cognitive disabilities. Translation services (language or sign language) should also be provided at shelters and evacuation points. Jurisdictions in the OA must work with local educational and ethnic organizations to identify individuals who speak foreign languages and who will be available to assist in the evacuation.

Hazard-Specific Considerations

Dam Failure:
Shelter sites will be located outside the areas impacted by these hazards.

Earthquake:
Shelters will need to be assessed for structural damage prior to being opened up for public use.

Residents may refuse to evacuate from their homes following an earthquake and will choose to camp in their yards and protect their property as an alternative of going to a shelter.

Flood (100 Year)
Shelter sites will be located outside the areas impacted by these hazards.

Tsunami:
Based on traffic conditions, an evacuation from a short-notice tsunami incident may be conducted more efficiently by foot. Therefore, evacuation points or shelters will need to be established in proximity to where the population evacuated (2 miles from the coast).

Wildfire/Structural Fire:
Due to the unpredictability of wildfires and how they can spread rapidly, there will need to be flexibility in identifying shelters that are safely located outside the hazard zones.

Terrorism:
Sheltering-in-place may provide greater protection to the public during acts of terrorism involving chemical, biological, or radiological agents.

VII. Resources

It is important to know what types of resources are available and which agencies can provide them in order to effectively respond to an incident.

Personnel

The County has a list of critical personnel to notify during an incident and will go through established channels for mutual aid. Individual jurisdictions are responsible for maintaining their respective lists and notifying their critical personnel during an emergency.

It is recommended that each jurisdiction pre-identify skilled laborer resources that may be needed during an emergency such as bus drivers and interpreters.

Transportation

The County is developing MOUs/MOAs with the Metropolitan Transit System and the North County Transit District for the use of buses, trolleys, and rail resources and the provision of bus drivers, light rail transit operators, and paratransit operators. Agreements with private school and charter bus companies and other private transportation companies will also be pursued. In

addition, the County will work on establishing and maintaining working relationships with partner organizations including advocacy organizations, agencies that serve the transportation-dependent populations, and faith and community based organizations. All available transportation resources will be included in the WebEOC tracking system database.

Buses are San Diego's greatest resource in terms of alternative transportation modes. The Metropolitan Transit System has approximately 600 buses that could be made available for an evacuation effort, each of which can accommodate two wheelchairs. The Metropolitan Transit System could also provide bus drivers and paratransit operators.

Additional potential transportation resources include, but are not limited to, the following:

A. Charter or school buses
B. San Diego Trolley
C. Amtrak
D. Shuttles
E. Taxis
F. Hotel vans
G. Rental cars
H. Limousines
I. Helicopters

Additional Resource Requirements

It is essential that jurisdictions have a good understanding of what resources will or will not be available to them from other agencies in an evacuation effort. Jurisdictions should ensure that mutual aid agreements exist for critical resources such as traffic barricades, heavy equipment, and personnel resources. It is also essential that local jurisdictions establish and maintain working relationships with public and private agencies that work with special needs populations or serve the transportation-dependent populations. These agencies can provide assistance in the identification and transportation of special needs populations.

MOUs need to be formalized with other agencies and organizations for the provision of animal food, water, and supplies as well as assistance in the transportation of large animals. In addition, potential volunteer resources and private groups that can provide animal services should be identified and tracked in WebEOC.

Mutual Aid

Under the terms of the California Master Mutual Aid Agreement, emergency response mutual aid is provided on a voluntary basis from one jurisdiction to another. The Southern Mutual Aid Region VI consists of six counties and includes the County of San Diego. To facilitate mutual aid, discipline-specific mutual aid systems work through designated mutual aid coordinators at the OA, regional, and state levels. Mutual aid coordinators are established for:

A. Fire and Rescue;

B. Law Enforcement;

C. Emergency Services; and

D. Disaster Medical.

The basic role of a mutual aid coordinator is to:

1. Receive mutual aid requests;
2. Coordinate the provision of resources from within the coordinator's geographic area of responsibility; and
3. Pass unfilled requests to the next governmental level.

Mutual aid requests that do not fall into one of the discipline-specific mutual aid systems are handled through the emergency services mutual aid system by emergency management staff at the local government, OA, regional, and state levels.

When an OA needs a resource, it forwards a request to the Regional EOC. The requesting OA generates a mission request tracking form, which includes the following information:

1. A description of the current situation;
2. A description of the requested staff, equipment, facility, and supply needed;
3. Specification of the type or nature of the service to be provided;
4. Delivery location with a common map reference;
5. Local contact at delivery location with primary and secondary means of contact;
6. Name of the requesting agency and/or OA contact person;
7. Indication of when the resource is needed and an estimated duration of use; and
8. For requested resources that include personnel and/or equipment with operators, a description of logistical support is required (e.g., food, shelter, fuel, and reasonable maintenance).

Fire and Rescue and Law Enforcement mutual aid operations in the San Diego OA are described in Annexes B and C of the Operational Area Emergency Plan. San Diego OA will follow the established Mutual Aid procedures to obtain additional supplies, equipment, and personnel to assist in the evacuation.

American Red Cross

The American Red Cross maintains disaster field supply storage facilities in Southern California. The warehouses contain materials for shelters, such as cots, blankets, and comfort kits, and equipment needed for such American Red Cross operations as mobile feeding.

The American Red Cross maintains contracts with private vendors for foods to be distributed through mobile feeding operations. Disaster field supplies and supply contracts support American Red Cross operations.

Resources are transported via American Red Cross vehicles, private contractors of the American Red Cross, or if needed, through local government or OA support.

American Red Cross chapters maintain their own caches of supplies for smaller scale shelters. American Red Cross chapters use their own resources and activate existing agreements with local vendors as much as possible to meet local needs.

VIII. Access Control and Security

Once an area is evacuated, it needs to be kept clear for security reasons, the safety of responders, and to keep individuals out of hazardous areas. Perimeter control is normally accomplished by establishing Access Control Points, roadblocks, or road closures supplemented by suitably equipped mobile patrols.

Security Requirements

After people have been evacuated, access back into the damaged areas will be controlled to secure the area and protect public safety. Access Control Points will be established through staffed check points, road blocks, or road closures and can be used to establish outer and inner perimeter controls. The outer perimeter control will be used to provide information and reduce sight-seeing traffic. The inner perimeter control will function to restrict traffic to emergency response vehicles and personnel only. When possible, law enforcement personnel will also conduct periodic patrols within the secured areas, to deter theft and looting of abandoned residences. Access back into the evacuated areas should initially be limited to:

A. Emergency service and public works personnel;

B. Utility companies engaged in restoring utility services;

C. Contractors restoring damaged buildings, clearing roads, and removing debris;

D. Commercial vehicles delivering food, essential supplies, life support equipment, construction supplies, and other related materials; and

E. Media representatives.

Law enforcement will be present at designated evacuation and transportation points and shelter sites for security, crowd control, and to deter criminal activity. Local law enforcement agencies can request mutual aid from the San Diego County Sheriff who serves as the OA Law Enforcement Coordinator.

Law enforcement personnel should also establish protocols for allowing critical employees, including essential medical and volunteer staff through roadblocks. Law enforcement should also consider making allowances at blockades, shelters, and other impacted areas for attendants, home health aides, visiting nurses, guide animals, and other individuals that are crucial to the immediate health care needs of people with disabilities.

IX. Re-Entry Procedures

Guidance and procedures to ensure a coordinated, safe, and orderly re-entry into impacted communities following an incident is provided in the County of San Diego Re-Entry Protocol. Re-entry will be initiated by the EOC Director, based on clearance from the Incident Commander or the Liaison Officer of the Incident Management Team, in consultation with the Operations Section Chief at the OA EOC. In the event that the OA EOC has been deactivated, re-entry procedures will be initiated by the Incident Commander or the Liaison Officer of the Incident Management Team.

The Operations Section Chief or the Incident Commander will designate a Re-Entry Coordinator. The Re-Entry Coordinator is responsible for coordinating the re-entry procedures with all involved agencies and ensuring effective communication. Priorities for re-entry include:

A. Safety

B. Security

C. Damage Assessment

D. Restoration of Services

E. Communication of Information

The impacted areas must be thoroughly investigated to ensure it is safe for residents to return and normal operations have been restored. This assessment will include verification that:

1. Structures and trees are deemed safe;
2. Damage and safety assessment has been completed;
3. There are no leaking or ruptured gas lines or downed power lines;
4. Water and sewer lines have been repaired;
5. Search and rescue operations have been completed;
6. There are no hazardous materials that can threaten public safety or appropriate warnings have been issued;
7. Water has been deemed safe or appropriate warnings have been issued;
8. Major transportation routes are passable and debris has been removed from public right-of-way; and
9. There is no threat to public safety and other significant hazards have been eliminated.

The public will be notified of the re-entry status through emergency broadcast radio, television, press releases, internet, informational phone lines such as 2-1-1, community briefings, and informational updates at shelters.

Once evacuees are permitted to return, it is important that procedures are established to properly identify residents and critical support personnel as well as ensure the legitimacy of contractors, insurance adjustors, and other personnel. Re-entry points should be staffed by law enforcement personnel.

Transportation resources will have to be coordinated to return evacuees that require transportation assistance from evacuation points or shelters back to their communities. Traffic management plans will need to be established for the return of evacuees which include the identification of preferred travel routes. Relief agencies such as the American Red Cross and Public Health Departments will also need to work closely with residents to provide information material and assistance.

When people are permitted to leave the shelters and return back to their homes, there is a potential that people with disabilities may not be able to enter their homes, especially if required ramps or other means of access have been destroyed. Due to these considerations, short-term housing must be identified that can accommodate the needs of personnel with disabilities. Potential sites could be hotels or motels, apartment buildings, or portable trailers with ramps. It is also important that these temporary housing sites are located in proximity to necessary support networks.

Each local EOC will be responsible for making the determination that re-entry has been completed for its jurisdiction, and promptly informing the OA EOC. Following confirmation from all affected jurisdictions that the re-entry process is complete, the OA EOC will notify every local EOC in the affected area of the date and time of completion.

X. Evacuation Annex Training and Exercises

The OA Evacuation Annex is considered a working document that will evolve in response to ever-changing threats. Ongoing exercises, training, evaluation, management, and maintenance of this Annex will ensure that new hazards and changes in communities can be addressed. A well-developed training and exercise program is vital to ensuring overall readiness and preparedness. Training ensures that personnel are prepared for their roles and responsibilities. Exercises test the capabilities, resources, and working relationships of responding agencies.

Training

All County and City staff should receive awareness training on the policies and procedures identified in their respective evacuation plan. All staff that may potentially participate in responding to emergencies in the City or OA EOC or Department Operations Centers must maintain minimum training competencies. An on-going training documentation program should also be developed by each jurisdiction to accommodate staff turnover and ensure all personnel have the required competencies. Training can be accomplished through classroom or internet instruction, coursework, independent study, on-the-job training, or hands-on exercises.

Shelter staff and volunteers are well trained to provide general emergency services, but it is also important that they become familiar with at least identifying if not providing services to people with disabilities. Shelter staff should also be trained on how to communicate with people who are deaf or hard of hearing such as exchanging notes, posting signs, or posting written messages. Staff should also be aware that they may have to read printed information or provide other types of assistance to people who are blind or have poor vision.

Exercises

Conducting regular tabletop and operational exercises will help identify areas of the Annex that require revision, enhancement, or additional detail. Exercises also help identify additional training or equipment that is necessary to improve the capabilities of response personnel to implement evacuation efforts. The Homeland Security Exercise and Evaluation Program describes the types of exercises sponsored and approved by the U.S. Department of Homeland Security, Office for Domestic Preparedness including seminars, tabletops, drills, functional exercises, and full-scale exercises.

Seminars are discussion based exercises to provide an overview of the plan procedures, concepts, protocols, available resources, and strategies. Tabletop exercises involve participants discussing simulated situations to assess plans, policies, and procedures. Tabletop exercises provide a convenient and low cost method of introducing officials to problem situations for discussion and problem solving. Such exercises are a good way to see if adequate emergency policies and procedures exist. Periodic tabletop exercises specific to short-notice and no-notice incidents requiring evacuation efforts within the OA are recommended.

Drills are coordinated activities used to test a single specific operation or procedure of an agency. Drills could be used to test evacuation notification procedures, transportation resource deployment, requests for mutual aid, or evacuation point activation. Functional exercises are intended to test multiple functions of a plan through the development of a scenario with simulated movement of personnel and equipment. The objective is to test the ability of the plan's procedures, policies, and staff to respond to a realistic, stressful, and complex crisis scenario. These plans can also be coordinated with adjoining jurisdictions. Full-scale exercises are the most complex and involve multiple agencies and jurisdictions to test the implementation of a plan; however this level of exercise would be far too disruptive to the communities.

An After Action Report shall be developed after each exercise and a real-life incident requiring evacuation to assess strengths, weaknesses, and opportunities of the evacuation effort and to determine recommendations to improve evacuation response. Based on the After Action Report, the Corrective Action Plan and specific completion schedule should be developed. As part of the Corrective Action Plan, recommendations identified in the After Action Report will then be integrated into the evacuation plans.

Public Outreach

It is recommended that each jurisdiction conduct public information programs to increase citizen awareness of potential hazards that may require an evacuation effort, potential evacuation routes, availability of transportation, what people should take with them during an evacuation, recommendations for families with small children, where they can expect to receive timely information, and how pets will be accommodated.

People with disabilities should also be educated about realistic expectations of service during and after an emergency. The public must also be informed about the importance of workplace and home evacuation procedures and the need to practice these drills on a regular basis. Furthermore, the public must be aware of the importance of family disaster planning and the

potential need to shelter in place following an incident. Animal owners should be encouraged to purchase appropriate cages, carriers, or trailers for their animals, maintain a supply of medicines or special foods that the animal requires, and ensure their animals wear identification at all times and are microchipped.

San Diego County OES will have copies of the OA Evacuation Annex available for public review.

XI. Annex Maintenance

San Diego County OES will be responsible for maintaining and updating the OA Evacuation Annex. The Annex will be reviewed annually and updated as necessary based on lessons learned and After Action Reports following drills, exercises, or actual incidents. The Annex will be revised every four years, at a minimum, to integrate new hazard information, established MOU/MOAs, changes in communities, and incorporate lessons learned from exercises or real incidents.

Revisions and updates should include:

1. Review of existing evacuation procedures for all identified hazards to ensure continued accuracy and validity;
2. Review of the availability of evacuation routes;
3. Incorporation of new MOUs/MOA and resources;
4. Determination of additional evacuation procedures;
5. Assurance that necessary training has been made available to all relevant departments/agencies.

Departments and agencies assigned responsibilities in this Annex are accountable for developing and maintaining SOPs which cover those responsibilities.

In addition, a Steering Committee should be established to work with the individual jurisdictions as they are developing or updating their specific evacuation plans to ensure all plans are consistent and can be coordinated during an evacuation effort.

Changes to this Annex shall be recorded in the Record of Changes table on the following page.

Record of Changes

Date	Page Number	Brief Description of Change	Changed By

Appendix A

Level III Evacuation Considerations

This appendix is intended to provide additional considerations that would be applicable during a Level III (catastrophic) evacuation effort. The National Response Plan defines a catastrophic event as any natural or manmade incident, including terrorism, which results in extraordinary levels of mass causalities, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions. A catastrophic event could result in sustained national impacts over a prolonged period of time, immediately exceed local and State resources, and significantly interrupt government operations and emergency services to such an extent that national security could be threatened.

The following concepts, circumstances, and strategies should be considered during a Level III evacuation effort:

1. Food, water, restrooms, fuel, and shelter opportunities need to be available along evacuation routes.
2. Rest areas, truck weigh stations, welcome centers, and service plazas should be staffed with emergency personnel to provide information to evacuees en-route.
3. Tow trucks will need to be deployed along the evacuation routes to remove stalled or broken-down vehicles.
4. Refueling resources will need to be provided for vehicles that operate on gas, diesel, and compressed natural gas.
5. Mega shelters sites may need to be identified and staffed.
6. The OA EOC will need to coordinate with shelter sites outside the county including Riverside and Orange County. The Riverside American Red Cross has an approximate capacity to accommodate 25,000 people.
7. A large scale evacuation effort over a long distance may be very challenging given the transportation network of San Diego County.
8. Under Emergency Support Function -6: Mass Care, Housing, and Human Services, American Red Cross and FEMA are to assist evacuees and people with special needs. The National Response Plan also refers to the use of the National Disaster Medical System, which can be activated by the Department of Homeland Security to assist in medial response and patient evacuations beyond care provided under Emergency Support Function -6.
9. Under the National Response Plan, a catastrophic incident engenders a comprehensive and integrated Federal, State, and local response. When the Secretary of Defense authorizes Defense Support of Civil Authorities for domestic incidents, the Department of Defense retains command of military forces under Defense Support of Civil Authorities and coordinates its activities under a Unified Area Command.

10. FEMA maintains pre-positioned caches of disaster supplies throughout the western United States.
11. In the event of a catastrophic incident in the San Diego County, FEMA will assign representatives with the authority to commit federal resources to the County and arrange the logistics of federal shipments.
12. During the first 48 hours following an incident, FEMA transports “push items”—federal assets that include Emergency Response Teams, equipment, and other supplies—to an incident Mobilization Center.
13. FEMA ships resources from mobilization centers to Federal Operational Staging Areas and to state staging areas, and relies on state and local agencies to distribute the resources.
    A. In a catastrophic incident, FEMA will deliver resources and transfer them to state control at any of the following locations:
    B. - Directly where the resources are needed;
    C. - Incident Command Post in a local jurisdiction;
    D. - Point of Distribution;
    E. - State staging area;
    F. - Federal Operational Staging Area; or
    G. - Mobilization Center.
14. Federal personnel provide warehousing, transportation, and other labor whenever resources remain under the management of the Federal Government.
15. FEMA resources include federal support until the point where supplies are handed off to the state and local authorities for distribution to the public. When supplies and commodities are handed off to the state and local government, labor and logistics support becomes the responsibility of those parties, unless the disaster requires further federal support from the Federal Government.
16. FEMA is responsible for restocking Mobilization Centers and Federal Operational Staging Areas to a 1 to 3-day supply level.
17. FEMA validates the eligibility of and prioritizes requests from the State Government.
18. FEMA mission tasks the Department of Transportation to activate the National Transportation Contract as part of Emergency Support Function #1 – Transportation.
19. FEMA mission tasks the U.S. Army Corps of Engineers to support requests for ice, water, and emergency power under Emergency Support Function #3 – Public Works and Engineering.
20. Under the National Response Plan and at FEMA’s direction, the U.S. Army Corps of Engineers may provide local and State Government with the following direct federal assistance:
    A. Supplies of bottled or bulk potable water;
    B. Supplies of packaged ice;

C. Transportation of purchased commodities to one or more staging and/or distribution sites, including moving from staging sites to Points of Distribution;

D. Loading and unloading of trailers and reefers;

E. Storing of purchased or government-furnished commodities at staging sites outside of affected areas or Points of Distribution in affected areas;

F. Managing commodity contracts to execute assigned mission.

21. The Department of Homeland Security and Health and Human Services Agency manage the Strategic National Stockpile (SNS) which is a large inventory of medicine and medical supplies used to protect the public if an emergency is severe enough to deplete local medical supplies.
22. The SNS, which is strategically located in caches throughout the country, are staged for shipping to a disaster area within 12 hours of notification.
23. Technical staff travels with the SNS push packages to coordinate with state and local officials, and to ensure prompt and effective use of the materials.
24. Health and Human Services transfers authority for the SNS assets to state and local authorities once they arrive at a designated state receiving and storage site.

Appendix B

Instructions on Sheltering-In-Place

- Close and lock all windows and exterior doors.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Get your disaster supplies kit and make sure the radio is working.
- Go to an interior room without windows that is above ground level. In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier than air, and may seep into basements even if the windows are closed.
- Bring your pets with you, and be sure to bring additional food and water supplies for them.
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into the room.
- Keep listening to your radio or television until you are told all is safe or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community.

Appendix C

Suggested Items to Take During an Evacuation

San Diego County OES provides the following list of suggested items that the public should take with them during an evacuation:

Cash and Credit Cards
Important Documents

- Social Security Cards
- Drivers License
- Passport
- Medical Records
- Insurance Information
- Deeds
- Titles
- Most Recent Tax Returns

Names, Addresses, and Telephone Numbers of Doctors And Pharmacists
Change of Clothing for each Family Member

Personal Hygiene Items

- Toothbrush and Toothpaste
- Shampoo
- Lotion
- Soap
- Deodorant
- Kleenex
- Essential medicines and eyeglasses
- Feminine hygiene supplies
- Other personal hygiene supplies (based on individual needs)

Family Photos

Baby Items

- Diapers
- Formula
- Food
- Change of Clothing

Special Needs Items

- Wheelchair
- Medications
- Canes

Pet Care Items

- Identification
- Immunizations
- Carrier or Cage
- Muzzle or Leash
- Food

Appendix D

Roadway Capacities

Roadway	AM Peak Capacity (vph)
30TH	3,100
ALTA	950
BALBOA	3,004
BARHAM	4,010
BEAR VALLEY	2,538
BIRCH	1,872
BLACK MOUNTAIN	3,300
BROADWAY	3,254
CAM DEL NORTE	2,356
CAM DEL RIO WEST	5,100
CAMINO SANTA FE	2,300
CAMINO SUR	5,100
CAMPO	950
CARMEL MTN	3,760
CLAIREMONT MESA	3,202
DEL MAR HEIGHTS	2,808
EASTLAKE PKWY	5,100
EL CAMINO REAL	5,100
ENCINITAS	3,300
ENCINITAS	3,300
FAIRMOUNT	3,300
FLETCHER	3,868
FRIARS	2,950
GENESEE	1,654
H	5,100
HUNTE	5,100
I-15 HOV SB	3,200
I-15 NB	8,800
I-15 SB	4,400
I-5 HOV NB	1,600
I-5 NB	7,600
I-5 SB	7,600
I-8 EB	4,000
I-8 WB	4,000
I-805 HOV NB	1,600
I-805 NB	8,400
LA JOLLA PARKWAY	1,908
LA JOLLA VILLAGE	3,618
LA MEDIA	3,362
LAKE JENNINGS PARK	3,100

Roadway	AM Peak Capacity (vph)
LAS POSAS	3,760
LINCOLN	2,050
LOS COCHES	5,100
MANCHESTER	4,900
MAPLEVIEW	1,000
MELROSE	3,300
MIRA MESA	2,356
MIRAMAR	5,100
MISSION	3,760
MISSION GORGE	3,100
NAVAJO	1,906
NEW PROCTOR VALLEY	5,100
NOBEL	5,100
NORTH HARBOR	4,786
NORTH TORREY PINES	3,274
OCEANSIDE	5,100
OLIVENHAIN	1,906
OLYMPIC PARKWAY	5,100
ORANGE	5,100
OTAY LAKES	4,928
OTAY MESA	6,900
OTAY VALLEY	5,100
PACIFIC	4,786
PACIFIC NB	4,900
PALA	950
PALM	2,950
PALOMAR AIRPORT	1,400
PASEO DE LAS AMERICA	3,100
PASEO RANCHERO	5,100
PROCTOR VALLEY	2,000
RAMP	3,100
RANCHO SANTA FE	1,634
RIVERFORD	1,250
SABRE SPRINGS	2,300
SAN MARCOS	5,200
SCRIPPS POWAY	3,652
SEA WORLD	2,372
SIEMPRE VIVA	2,950
SILVER STRAND	2,412
SR-125 NB	3,452
SR-125 SB	5,700
SR-163 NB	3,600
SR-163 SB	3,600
SR-52 EB	4,000

Roadway	AM Peak Capacity (vph)
SR-52 WB	3,600
SR-54 EB	6,000
SR-54 HOV EB	1,600
SR-54 HOV WB	1,600
SR-54 WB	6,000
SR-56 EB	2,000
SR-56 WB	4,000
SR-67 NB	2,952
SR-67 SB	4,000
SR-75 HOV SB	1,600
SR-75 NB	4,000
SR-75 SB	6,000
SR-76 NEW	2,050
SR-78 EB	4,800
SR-78 WB	5,400
SR-905 EB	5,200
SR-905 WB	2,000
SR-94	950
SR-94 EB	6,000
SR-94 WB	4,000
SR905 EXPRESSWAY	3,100
SUNSET CLIFFS	1,656
SWEETWATER	3,024
TED WILLIAMS	2,156
TELEGRAPH CANYON	2,950
TORREY PINES	4,678
TWIN OAKS VALLEY	2,640
TWIN PEAKS	1,656
URBAN CENTER EAST	5,100
VALLEY	3,300
VALLEY CENTER	1,170
VIA RANCHO	3,038
WASHINGTON	3,300
WIEGHORST	1,420
WOODLAND	2,300

Appendix E

Acronyms and Abbreviations

Caltrans	California Department of Transportation
CERT	Community Emergency Response Team
CHP	California Highway Patrol
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPH	Miles Per Hour
OA	Operational Area
OES	Office of Emergency Services
SDG&E	San Diego Gas and Electric
SOP	Standard Operating Procedures
VPH	Vehicles Per Hour

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Unified San Diego County Emergency Services Organization And County Of San Diego

Operational Area Emergency Plan

ANNEX R

Operational Area Recovery Plan

October 2010

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UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION
AND
COUNTY OF SAN DIEGO

OPERATIONAL AREA RECOVERY PLAN

April 18, 2007

Prepared by: URS Corporation
Job Number: 27656124.00100

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Attachment 1 - Disaster Specific Checklists

1 INTRODUCTION

1.1 Overview

Recovery operations include the development, coordination, and execution of service- and site-restoration plans for impacted communities, as well as the reconstitution of government operations and services. Reconstitution of government operations and services can be accomplished through individual, private-sector, nongovernmental, and public assistance programs that identify needs and define resources, provide housing and promote restoration and address long-term care and treatment of affected persons. Moreover, recovery involves incident-related cost recuperation, identification and implementation of mitigation measures to reduce or eliminate effects of future incidents, as well as evaluation of lessons learned. Recovery operations should begin with or shortly after a disaster occurs and can be generally divided into two phases, Short-term and Long-term.

No single jurisdiction or agency has the capability and resources to address all disasters or major emergency situations. Therefore, the Unified San Diego County Emergency Services Organization (USDCESO) was established to provide and address disaster related problems on a regional basis. This "Operational Area Recovery Plan" (OA Recovery Plan) has been developed to provide guidance for the San Diego County Operational Area.

The OA Recovery Plan is incorporated by reference into the Operational Area Emergency Plan (OAEP) and is superseded by the OAEP if the plans conflict. The OA Recovery Plan defines responsibilities, establishes a recovery organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System (SEMS) and compliant with the National Incident Management System (NIMS).

The "Operational Area" consists of the county and each of its political subdivisions including special districts. The "Operational Area Coordinator" (OAC) is elected by the Unified Disaster Council, and is currently the County’s Chief Administrative Officer (CAO).

During multi-jurisdictional emergencies, each jurisdiction and special district is responsible for conducting and managing emergencies within its boundaries. The OAC serves as the primary focal point for coordination of mutual aid, assistance, and information between local jurisdictions and special districts.

Additional departmental Standard Operating Procedures (SOPs) are incorporated by reference into this plan and are listed below in Section 1.6, Authorities and References.

1.2 Purpose

The basic premise of the OA Recovery Plan is that planning undertaken in advance of a disaster can accelerate a post-disaster return to normalcy. The OA Recovery Plan describes a coordinated system for disaster recovery operations in disaster situations associated with natural disasters, technological incidents, terrorism and nuclear-related incidents. It delineates operational concepts relating to recovery, identifies components of the recovery organization, and describes the overall responsibilities intended to expedite public and private recovery. The OA Recovery Plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private sector.

The OA Recovery Plan is designed to provide guidance to the County of San Diego and jurisdictions, agencies, organizations and businesses interacting with the County. Each jurisdiction and special district in the Operational Area must develop an individual recovery plan or recovery annex to complement existing Emergency Operations Plans (EOPs). The OA Recovery Plan should be used as a template and will support or supplement the recovery plans prepared and maintained by each local government.

1.3 Goals and Objectives

Operational Area recovery goals include the coordinated gathering and evaluation of damage assessment information; accurate estimation of the financial value of losses and recovery costs; quick application for state and federal disaster relief funds; timely restoration of community services and infrastructure to pre-disaster condition; and implementation of cost-effective and practicable mitigation measures.

The OA Recovery Plan establishes the following objectives for the Operational Area:

- Define and establish an Operational Area Damage Assessment Team for response to the San Diego County Operational Area that includes the Operational Area Emergency Operations Center (EOC), all City EOCs, and field survey/inspection teams.
- Determine the roles and responsibilities for all involved agencies.
- Outline the essential functions involved in full scale damage assessment reporting and recovery.

1.4 Planning Assumptions and Situations

The OA Recovery Plan is an all-hazards recovery plan for incidents of varying magnitude. The OA Recovery Plan incorporates lessons learned from response and recovery efforts within the San Diego Operational Area as well as best emergency management practices from around the nation.

Every disaster recovery plan has a foundation of assumptions on which the plan is based. The assumptions limit the circumstances that the plan addresses and the limits define the magnitude of the disaster the organization is preparing to address. The OA Recovery Plan addresses incidents of local, regional, state, and national significance, including Presidentially declared major disasters as defined in the Stafford Act.

The following assumptions were considered in developing the OA Recovery Plan:

- The geographical area of San Diego County is of sufficient size and is subject to a sufficient diversity of hazards, and is therefore unlikely to experience a major natural disaster which will cause the Operational Area to be completely destroyed.
- The geographical area of San Diego County is of sufficient size and is subject to a sufficient diversity of hazards so that natural disasters and man-made/terrorist incidents are likely to occur. The variable severity of the likely disaster requires the establishment of scalable, adaptable Recovery Operations.
- The geographical area of the State of California is of sufficient size and is subject to a sufficient diversity of hazards, therefore it is unlikely to experience a major natural disaster which will cause the State to be completely destroyed.
- A sufficient number of trained staff will be available to and capable of performing the functions defined within the OA Recovery Plan.
- Surface transportation in the Operational Area will be possible, or necessary long distance and local communications lines will be available.
- Although the OA Recovery Plan is designed for the worst case scenario, inherent in the plan strategy is the ability to recover from any disaster that does not overwhelm federal resources.

The Federal Government is currently evaluating its response and recovery activities following Hurricanes Katrina and Rita (2005) and this evaluation may lead to changes in federal guidance regarding response and recovery planning for catastrophic incidents. The OA Recovery Plan will be revised as appropriate when and if additional guidance is provided.

1.5 Plan Organization

The OA Recovery Plan is organized into sections, appendices and attachments that provide an organized overview of all aspects of recovery. It is intended to be used prior to an emergency to familiarize staff with response operations as well as during short and long-term recovery operations. Brief descriptions of the contents of each section, appendix and attachment are below.

- Introduction: Brief description of recovery operations, plan purpose, goals and objectives, planning assumptions, plan organization, and authorities and references.

- Concept of Operations: Provides information on response, and short and long-term operations as well as plan activation and termination.

- Organization: Describes the levels of emergency response according to SEMS and establishes the organization of response, short-term, and long-term recovery operations.

- Roles and Responsibilities: Defines roles and responsibilities for all participants in short and long-term recovery operations.

- Operations Functions: Provides information on short-term and long-term recovery operations functions, including: Resumption of Government Operations; Damage Assessment; Contracting; Documentation and Cost Recovery; Debris Removal and Management; Assistance Centers; Individual Assistance; Public Assistance; Re-Entry; and Hazard Mitigation.

- After-Action Reporting: Describes elements and protocol for completing after-action reports per SEMS regulations.

- Plan Maintenance, Training and Exercises: Explains the need and procedure for updates to the OA Recovery Plan and outlines a training and exercise program for management and staff.

- Appendices: The Plan includes nine (9) appendices and one (1) attachment to aid readers and facilitate implementation:

    - Definitions (Appendix A)
    - Damage Assessment Categories (Appendix B)
    - Acronyms/Abbreviations (Appendix C)
    - Forms (Appendix D)
    - Recovery Programs Matrices (Appendix E)
    - Public Assistance Functional Annex (Appendix F)
    - County of San Diego Re-Entry Protocol (Appendix G)
    - ESF Descriptions (Appendix H)
    - Disaster Debris Recycling and Handling Plan (Appendix I)
    - Disaster Specific Checklists (Attachment 1)

1.6 Authorities and References

The following Authorities and References related to this plan are organized alphabetically by title. All Authorities and References listed below are on file at the San Diego County Office of Emergency Services (OES). Also on file are other agreements with voluntary organizations and other governmental and private organizations.

1.6.1 Federal

Applicant Handbook (FEMA 323). Department of Homeland Security, Federal Emergency Management Agency.

Audit Tips for Managing Disaster-Related Projects. Department of Homeland Security Office of Inspector General.

Debris Management Guide (FEMA 322). Department of Homeland Security, Federal Emergency Management Agency.

Help After a Disaster - Applicant's Guide to the Individuals and Households Program. Department of Homeland Security, Federal Emergency Management Agency, August 2005.

Incident Command System, Field Operations Guide, ICS 420-1.

Public Assistance Guide (FEMA 322). Department of Homeland Security, Federal Emergency Management Agency, October 1999.

Public Assistance Policy Digest (FEMA 321). Department of Homeland Security, Federal Emergency Management Agency, October 2001.

Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Public Law 93-288, June, 2006

1.6.2 State

Article 9, Emergency Services, Section 8605 of the Government Code, Operational Areas.

California Coroners Mutual Aid Plan.

California Emergency Plan (May, 1998) and sub-plans.

California Emergency Services Act, Chapter 7 of Division 1 of Title 2 of the Government Code.

California Fire and Rescue Emergency Plan.

California Law Enforcement Mutual Aid Plan.

California Master Mutual Aid Agreement.

Disaster Debris Plan. California Integrated Waste Management Board.

Emergency Management in California. Governor's Office of Emergency Services, October 2003.

Governor's Orders and Regulations for a War Emergency, 1971.

Petris (SEMS) SB 1841 Chapter 1069 - Amendments to the Government Code, Article 7, California Emergency Services Act.

1.6.3 County

County of San Diego Emergency Services Ordinance No. 8183, dated December 15, 1992.

County of San Diego Re-Entry Protocol. County of San Diego Office of Emergency Services. September 2004.

County of San Diego Resolution adopting the California Master Mutual Agreement, December 11, 1950.

Disaster Debris Recycling and Handling - DRAFT. County of San Diego Department of Public Works, June 2006.

Emergency Response and Damage/Safety Assessment – Standard Operating Procedures. County of San Diego Department of Planning and Land Use. July 2006.

Model Disaster Preparedness and Response Plan of the San Diego Chapter of the International Conference of Building Officials, 1991.

Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA. County of San Diego Office of Emergency Services and the Unified Disaster Council, March 2004.

Operational Area Emergency Plan, Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, Interim Draft, December 2005.

Public Works Mutual Aid Plan.

San Diego County Animal Control Mutual Aid Agreement.

San Diego County Mutual Aid Agreement for Fire Departments.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan, March 2004.

Unified San Diego County Emergency Services Organization, Fifth Amended Emergency Services Agreement, 2005.

2 CONCEPT OF OPERATIONS

2.1 Overview

The various functions which constitute recovery operations occur on the continuum of Response, Short-term Recovery and Long-term Recovery Operations. The functions and their location in the continuum are provided in Section 5, Operations Functions.

2.2 Relationship to Response Operations

Response operations provide the foundation of the San Diego OA Recovery Plan. Recovery operations typically begin concurrently with or shortly after commencement of response operations. For example, cost recovery and resource demobilization are recovery functions that begin during the response phase as costs are incurred and resources are mobilized.

In recognition of recovery's close relationship to response, the Operational Area will staff the position of Recovery Coordinator as a member of the Operational Area EOC staff to coordinate recovery activities from the Operational Area EOC during the incident response phase. Depending on the nature, type and severity of the disaster, the Recovery Coordinator may expand the Recovery Organization and may have additional branches and units established under it during the response phase.

Under the Operational Area EOC's SOPs, an Initial Damage Estimate (IDE) is developed during the emergency response phase to support a request for a gubernatorial proclamation and for the State to request a presidential declaration. During the recovery phase, this assessment is refined to a more detailed level. This detailed damage/safety assessment will be needed to apply for various State and Federal disaster financial assistance programs.

Short-term recovery operations may continue to be coordinated from the Operational Area EOC after the response phase is over, if required. Under the San Diego OAEP, termination of the emergency's response phase is concurrent with the deactivation of the Operational Area EOC; however, continued coordination from the response phase into the recovery phase is necessary to identify high priority areas for resumption of utilities, liability concerns, financing, and recovery ordinances.

2.3 Short-term Recovery Operations

Short-term recovery operations include all agencies and jurisdictions participating in the Operational Area's disaster response. Activities are generally coordinated from within the EOC and recovery activities begin during the response phase of the emergency.

The key objectives of short-term recovery operations are to restore shelter, jobs, services and facilities quickly and efficiently. These operations include:

- Utility restoration;
- Expanded social, medical and mental health services;
- Re-establishment of government operations;
- Transportation route restoration;
- Debris removal and clean-up operations;
- Building safety inspections; and
- Abatement and demolition of hazardous structures.

Emergency actions may be taken to address specific conditions such as:

- Suspension of evictions;
- Request utilities to provide bill relief;
- Waiver of permit fees for damage repairs;
- Need for temporary housing and business space; and
- Change or alter traffic patterns.

Short-term recovery operations for the Operational Area will transition into long-term recovery operations at the direction of the Operational Area EOC Director. If the EOC is not activated at the time of transition, the Director of the County OES will make the determination to transition. At the local government level, the jurisdiction's Director of Emergency Services or similar position shall make the determination.

Under most circumstances, the transition from short to long-term recovery operations will occur within 90 days of the termination of the emergency or close of the incident period. The 90-day time period is intended only as a guide. Transition to long-term recovery operations may occur at any time within or after the 90-day period, depending on the severity of the emergency and the effectiveness of the coordinated local, State and/or Federal response.

2.4 Long-term Recovery Operations

The primary goal of long-term recovery operations is to rebuild safely and wisely, reducing future hazards and optimizing community improvements. The major objectives of these operations include:

- Reconstructed public facilities
- Coordinated delivery of long-term social and health services;
- Improved land use planning and implementation;

- An improved EOP;
- Re-establishment of the local economy to pre-disaster levels;
- Recovery of disaster-related costs; and
- Effective integration of mitigation strategies into recovery planning and operations.

Hazard mitigation actions will be coordinated and employed in all activities by all jurisdictions in order to ensure a maximum reduction of vulnerability to future disasters. Each affected jurisdiction is responsible for their own approach to mitigation, which could include zoning variances, building codes changes, plan reviews, seismic safety elements, and other land use planning techniques.

Local jurisdictions and special districts within the Operational Area will strive to restore essential facilities through repair, reconstruction, improvement or mitigation during long-term recovery operations. Redevelopment agencies within the Operational Area will play a vital role in rebuilding commercial areas. Jurisdictions and special districts will also continue to assist individual citizens and private businesses through long-term recovery operations with continued provision of local services and information regarding State and Federal assistance programs.

The County OES/EOC Director may appoint a Recovery Manager to lead long-term recovery operations. The newly appointed Recovery Manager will perform his or her duties through County OES under the direction of the OES/EOC Director and will direct long-term recovery activities in the unincorporated areas; while acting as a central resource for recovery activities in the incorporated jurisdictions. Local jurisdictions and special districts may or may not designate a new position title to manage long-term recovery functions.

2.5 Plan Activation and Termination

Emergency operations are generally activated in three levels based on the severity and scope of the incident and the availability of resources. Integral to response and recovery operations, the damage assessment function is involved in all of the levels as listed on the following page:

LEVEL I -
- The Operational Area EOC may or may not be activated.
- Damage assessments will be required.

LEVEL II -
- The Operational Area EOC will be activated.
- Field survey and inspection teams may be activated.
- Damage assessments will be required.
- Recovery phases will be initiated.

LEVEL III-
- The Operational Area EOC will be fully activated.
- Field survey and inspection teams will be fully activated.
- Damage assessments will be required.
- Full recovery phase will be initiated.

Activation and termination of this plan shall be at the direction of (1) the CAO in that capacity, or as the Operational Area Coordinator of USDCESO; (2) a designated Assistant CAO/Deputy CAO; or (3) the Director of County OES or designated representative.

3 ORGANIZATION

3.1 Recovery System Overview

The designated levels for response and recovery are organized according to the SEMS. Figure 3.1 depicts the organization of the levels.

Field: The field level is where recovery personnel and resources, under command of an appropriate authority, carry out recovery activities.

Local Jurisdiction: Local jurisdictions include cities, counties, and special districts. Local jurisdictions manage and coordinate recovery activities within their jurisdiction.

Operational Area: The Operational Area is defined as an intermediate level of the State emergency services organization consisting of all political subdivisions within San Diego County. The Operational Area is responsible for managing and/or coordinating information, resources, and priorities among local governments, and serves as the coordination and communication link between the local government level and regional level.

Region: Because of its size and geography, the State has been divided into six mutual aid regions. The regional level manages and coordinates information and resources among operational areas within the mutual aid region, and between the operational areas and the State level. The regional level also, along with the State level, coordinates overall State agency support for recovery activities within the region.

State: The State level manages State resources in response to the needs of the other levels, manages and coordinates mutual aid among the regions and between the regional level and State level. The State level acts as the provider of coordination and the communication link with the Federal disaster recovery system.

Federal: Federal resources supplements all local resources from the State to field operations. This task is filled by the Federal Emergency Management Agency (FEMA) in implementing the Individual and Public Assistance programs in declared major disasters.

3.2 Operational Area Overview

The organization of these phases is developed using a maximum impact event. Transition between Response, Short-Term and Long-Term organizations will be signaled by the Director of County OES or EOC Director. Generally, the EOC Director, Recovery Coordinator or Manager will only activate a few of the positions, units and branches. Responsibilities of positions, units and branches not activated are assumed by the next position up the organization.

3.2.1 Response Organization

Depending on the type, nature and severity of the disaster, the Director of County OES may appoint a Recovery Coordinator early in the response phase to begin planning and coordinating recovery efforts. The Recovery Coordinator will be assigned to the Operational Area EOC Policy Group Support. If the EOC is not activated, the Recovery Coordinator will be assigned to the staff of Director of County OES staff. The response organizational chart is depicted in Figure 3.2.

3.2.2 Short-Term Recovery Organization

Short-term recovery operations for the County of San Diego will be coordinated by a Recovery Coordinator under the direction of the Operational Area EOC Director. If the EOC is not activated, the Recovery Coordinator will be supervised by the Director of County OES. The short-term recovery organization is depicted in Figure 3.3.

3.2.3 Long-Term Recovery Organization

Depending on the type, nature and severity of the disaster, the Director of County OES may appoint a Recovery Manager to manage long-term recovery activities after the response and short-term recovery phases have ended. The Recovery Manager will work under the direction of the Operational Area EOC Director. If the EOC has been deactivated, the Recovery Manager will be supervised by the Director of County OES. The long-term recovery organization is depicted in Figure 3.4.

Figure 3.1
SEMS Levels

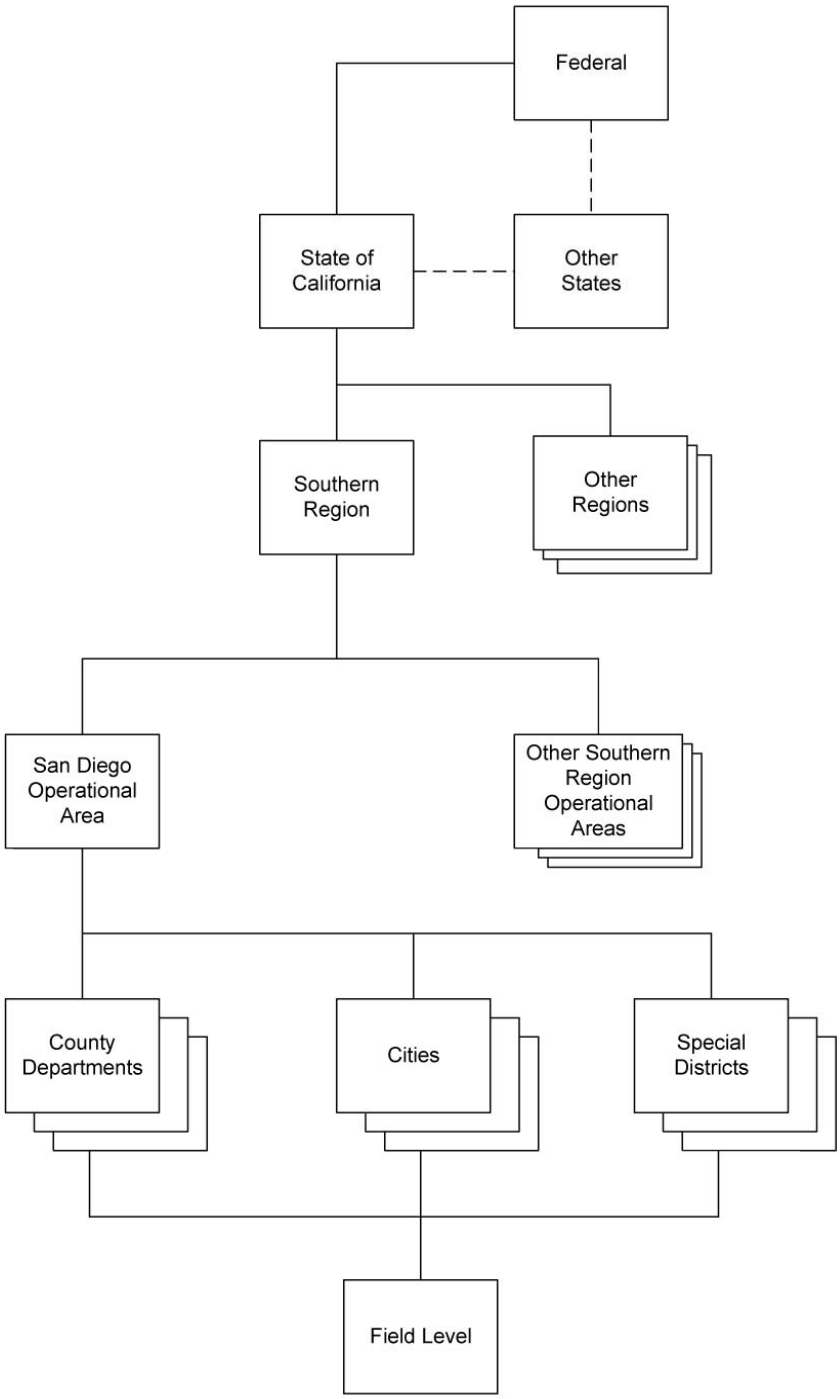


Figure 3.2
Response Organization

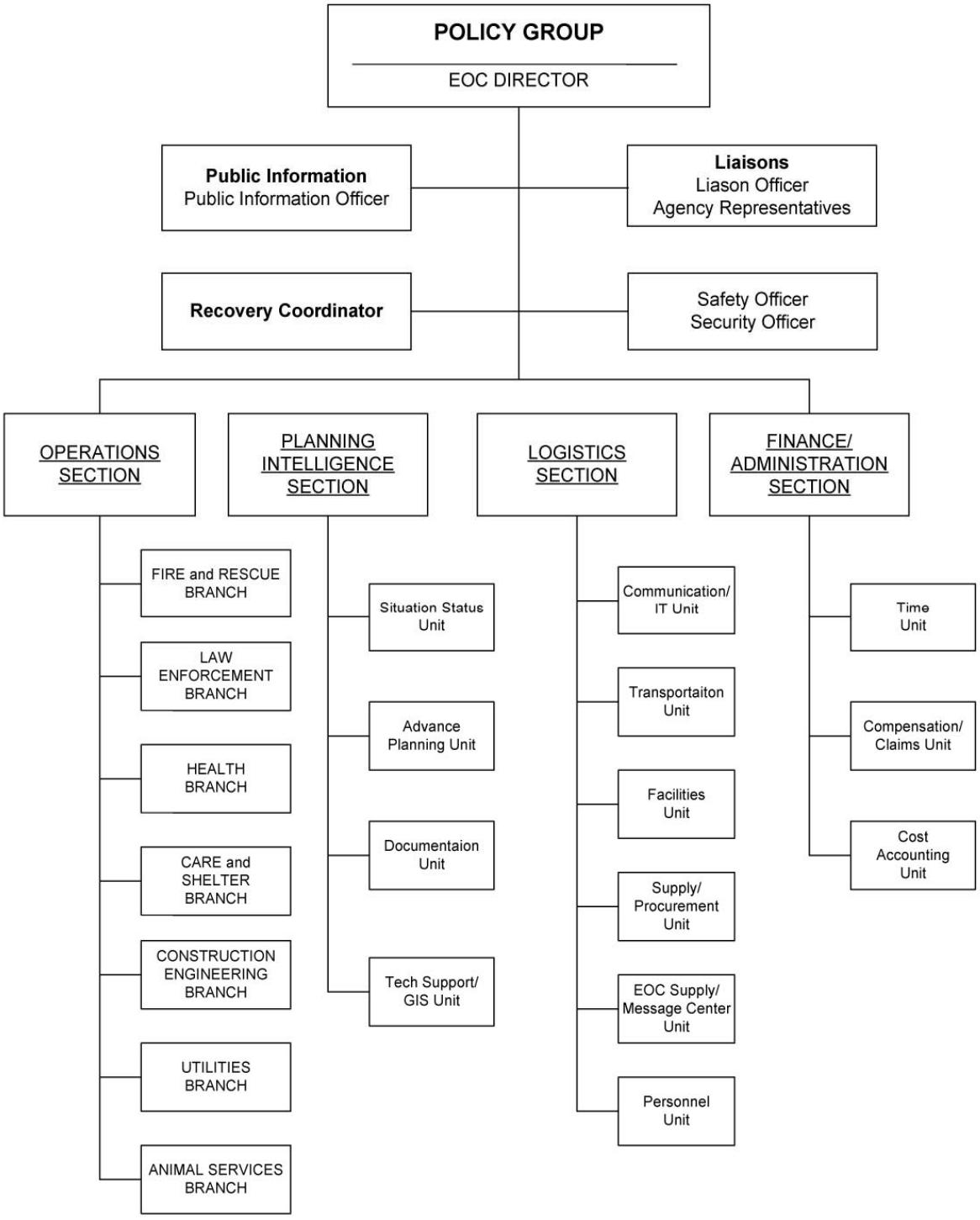


Figure 3.3
Short-Term Recovery Organization

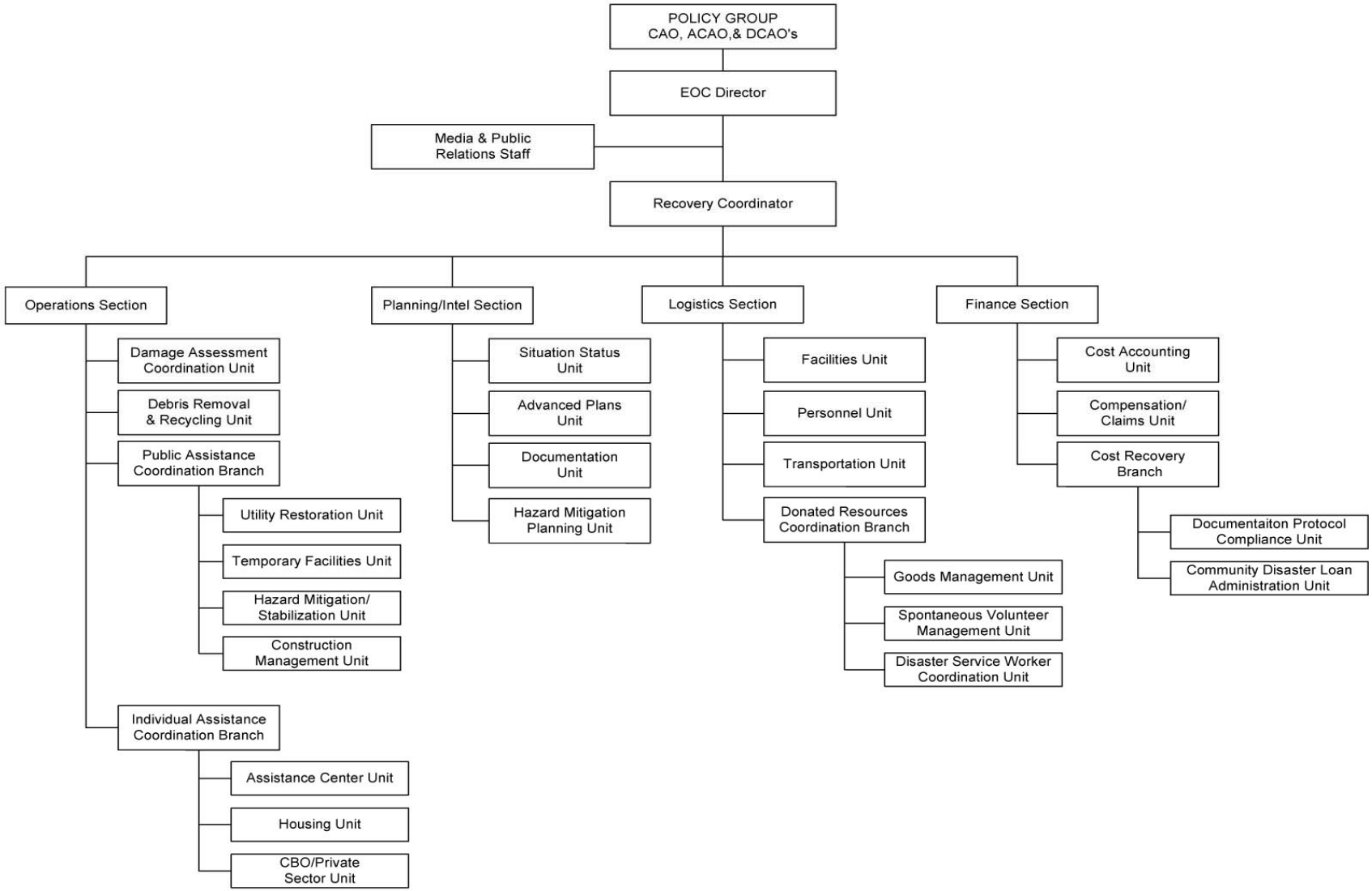
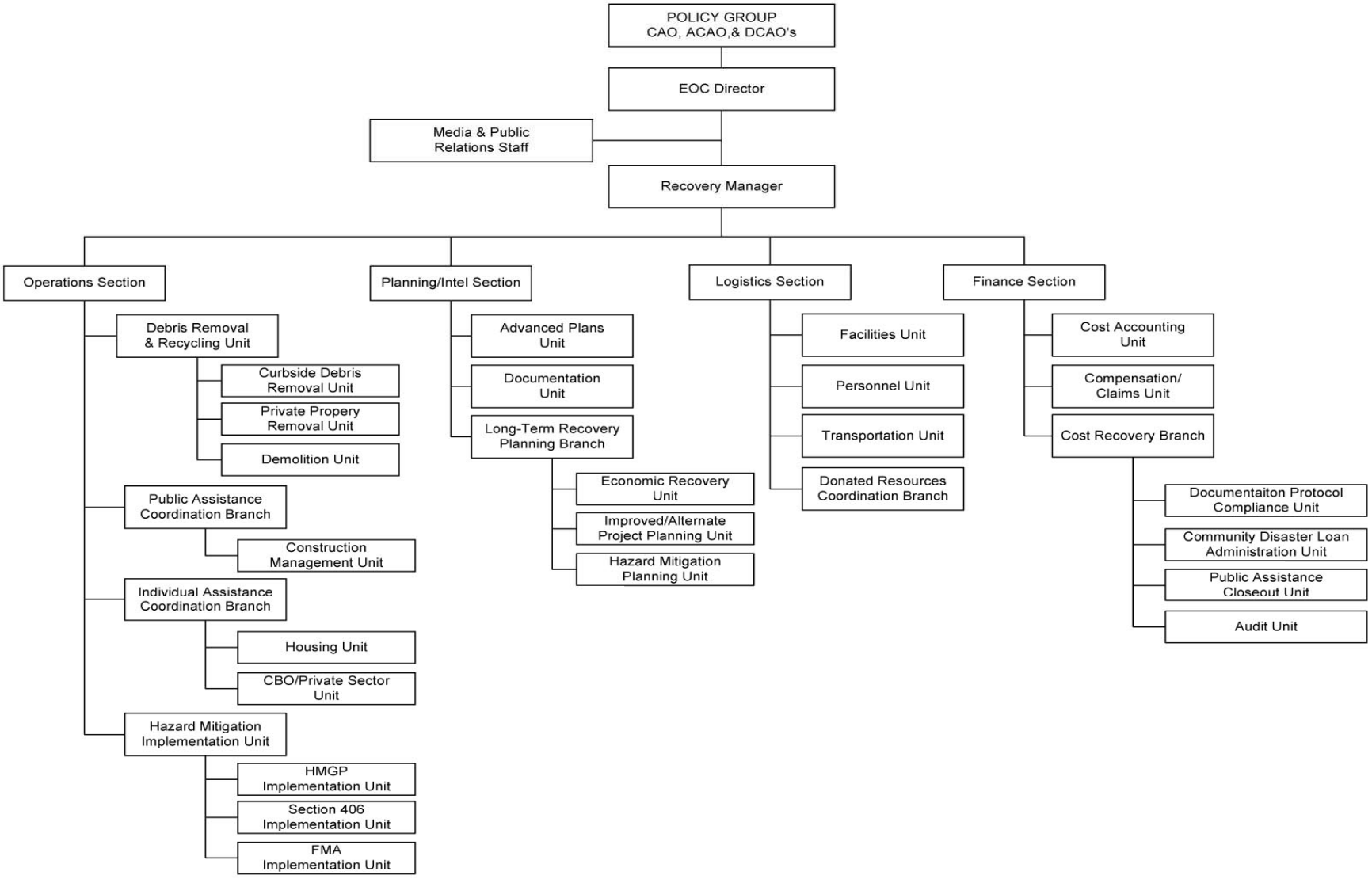


Figure 3.4
Long-Term Recovery Organization



4 ROLES AND RESPONSIBILITIES

4.1 Overview

The responsibilities of each County department are provided as Table 4.1 and detailed below.

4.2 All Affected Organizations

Every member of a recovery operations organization is responsible for documenting and reporting possible mitigation actions. Recovery issues involving other jurisdictions and/or special districts will be coordinated and managed between the County, the jurisdictions/districts or their designated representatives. All county departments may need to take responsibility for certain functions throughout the recovery process. All local jurisdictions and county departments should:

- Maintain SOPs and functional checklists, to include automatic response of designated personnel to either the EOC, field survey, or recovery phase assignments.
- Train personnel and alternates.
- Complete initial status reports and forward to appropriate EOC(s).

4.3 County of San Diego

The County of San Diego is the lead agency within the Operational Area with the responsibility to manage and/or coordinate information, resources, and priorities among local governments. The County also serves as the coordination and communication link between Operational Area jurisdictions, special districts and the Southern Region. The role of the County as the Operational Area lead agency does not change the coordination of discipline-specific resources such as fire, law, and medical, through their established mutual aid systems.

County OES is the administrator for the Operational Area and provides the OAC, responsible for day-to-day needs of the operational area.

The roles and responsibilities for the County of San Diego, its departments and agencies differ for the incorporated and unincorporated areas of the County. Unless otherwise specified below, the various County departments will coordinate recovery activities for the incorporated areas and direct and conduct recovery operations for the unincorporated areas as listed below.

4.3.1 Office of Emergency Services

- Responsible for the development, maintenance and testing of the OA Recovery Plan
- Directs and coordinates recovery activities.
- Provides support to the Operational Area Damage Assessment Team.
- Reports situation and damage to State OES.
- Coordinates and maintains files of all initial assessment reports.
- Coordinates and maintains all records during the recovery phases, along with the Auditor and Controller's Office.
- Coordinates the development of after-action reports.

4.3.2 Auditor and Controller's Department

- Coordinates with OES to develop cost accounting and documentation maintenance procedures and processes.
- Develops an audit trail for Auditor and Controller manual expenditures incurred during the recovery phase.
- Performs emergency warrant issuance activities.
- Coordinates and monitors FEMA documentation processes for eligible expenditures.
- Executes FEMA filing(s).
- Works with CTO to re-establish County financial systems.
- Continues to administer County payroll.
- Continues to Perform County accounts payable function.

4.3.3 Assessor's Office

- Coordinates the dollar estimates for damage assessment as part of the Operational Area Damage Assessment Team, in the EOC.
- Follows up on field reports in order to provide tax exemptions to owners of damaged private property.

4.3.4 Department of Environmental Health

- DEH Solid Waste Local Enforcement Agency assists with temporary and permanent solid waste facility permits for facilities in all jurisdictions except the City of San Diego.
- Evaluate County facilities for re-occupancy after an emergency, including ventilation systems.

- Perform health hazard evaluations and provide recommendations to Departments regarding disaster-related issues (including asbestos, lead, mold, etc).
- Conduct disaster-related health and safety training to include technical assistance to Departments on respiratory protection, fit tests and training and laws (CHD).
- Evaluate confined spaces.
- Assist Departments in establishing effective health and safety programs (bloodborne pathogens, hearing conservation, etc).
- Provide advice to County Departments on hazardous waste management.
- EPI Outbreak Surveillance.
- Expedite plan review for damaged subsurface disposal systems, drinking and monitoring wells.
- Coordinate the sampling and posting of signs warning of contaminated water at beaches when bacteria levels in monitoring results exceed State standards.
- DOC functions

4.3.5 Department of General Services

- Inspects and reports on the status of communications sites and regional/county facilities.
- Responsible for Cost Recovery Documentation of Field Response/Repairs and Estimates.
- Provides support to OES for the set up of Assistance Centers (Local, Family and Disaster) if located in County owned facilities or in the unincorporated areas.
- Provides generators for County owned facilities.

4.3.6 Fleet Management

The Fleet Management division of the General Services Department is responsible for maintaining a record of all county equipment. This record must be provided in a written format and will be used by the State and Federal inspectors when completing the equipment record portion of the Project Worksheets (PWs). This record is to include:

- Shop number of equipment (e.g. F11, S40 or SD)
- Description of equipment (e.g. 5 ton dump truck)
- Horsepower of equipment
- Jurisdictional hourly rate for equipment
- Breakdown of how the jurisdictional hourly rate was calculated

4.3.7 Department of Housing and Community Development

- Serves over 10,000 residents currently receiving federal housing assistance.
- Administers federal disaster housing assistance for victims.
- Serves Section 8 Rental Assistance applicants currently on the program or Tenant Based Rental Assistance participants.
- Coordinates with the Federal Department of Housing and Urban Development (HUD).

4.3.8 Department of Planning and Land Use

- Coordinates the Damage Assessment Team to include the field survey teams.
- Reports on behalf of the Operational Area Damage Assessment Team, in the EOC, during the recovery phase.
- Liaisons with International Conference of Building Officials (ICBO).

4.3.9 Department of Public Works

- Inspects and reports on county roads.
- Inspects and reports on drainage/flood control facilities.
- Inspects and reports on County water and wastewater facilities and other county facilities.
- At the direction of law enforcement, opens and closes county roads.
- Directs debris removal and recycling in the unincorporated areas.

4.3.10 Sheriff's Department

- Provides initial field situation reports and updates from field units and Aerial Support to Regional Enforcement Agencies (ASTREA).
- Maintains perimeter security and patrols recovery activities events.

4.3.11 Department of Parks and Recreation

- Department of Parks and Recreation (DPR) may be able to provide use of park space for temporary housing in time of a disaster
- All County parks will be available for the evacuated public and large animals at the request of law enforcement.
- All County parks and community centers will be available for temporary fire recovery centers and programs as requested.

- Damage Assessment: document damage (photos), compile lists of assets burned, and immediately begin BMPs for erosion control. When it is safe, DPR will deploy DPR Damage Assessment Teams to burned areas.

4.3.12 Department of Child Support Services

- Child Support checks are sent to the nearest open post office, and the Custodial Parent can pick up their check at the same time they pick up their other mail.
- For those that have issues getting their check (the check was destroyed, etc.), they can go to a Local Assistance Center (LAC) or Disaster Recovery Center, and a DCSS representative can cancel the original un-cashed warrant. The DCSS representative can have a new check issued to either a new address provided by the custodial parent, or could have the check available at the LAC when it is printed, a couple of days later.
- DCSS will need access to the statewide DCSS system (ARS) at the LAC, or they will need someone at DCSS to research the status of the individual accounts as customers come in.
- There are approximately 20,000 people that receive Child Support checks inside San Diego County each month.

4.4 Local Jurisdictions

Each incorporated jurisdiction is responsible for developing a recovery plan or annex. The adopted document should support the performance of all functions, roles and responsibilities not provided by the County, utilities, non-profit and community based organizations (CBOs) or the State and Federal Government. Within each jurisdiction, the following responsibilities shall be assigned to an existing position or a new position shall be established to provide:

4.4.1 Response Phase Coordination (Generally the EOC Director)

- File a Request for Public Assistance (RPA) with the State OES.
- Submit a list of damage sites (Exhibit “B”) to State OES and update the list as necessary.
- Assist the Recovery Manager as necessary.
- Attend State FEMA Applicant’s Briefing.
- Coordinate with the County Recovery Coordinator/Manager.

4.4.2 Recovery Manager

It is expected that the Director of Emergency Services of each jurisdiction will assign a Recovery Manager to oversee the disaster recovery process. The Recovery Manager will be assigned from the Department having the greatest degree of involvement, expenditure or damage. For example, a flood emergency will most likely result in a representative from the Public Works being appointed, while a civil unrest emergency will most likely result in a Recovery Manager being appointed from the Law Enforcement agency. Responsibilities of the Recovery Manager are as follows:

- Serve as the liaison between jurisdictions/agencies and all State and Federal disaster recovery agencies;
- Ensure all documentation gathered by each department on expenditures and damage is in the proper format for review by the State and Federal inspectors;
- Coordinate with the Departmental Point of Contact concerning site inspections by the State and Federal disaster recovery inspectors;
- Review all PWs prepared by the State and Federal inspectors for accuracy; either concurring with their recommendations or generating a letter of non-concurrence;
- Maintain accurate records of project sites, including copies of the Project Worksheets, applicable photographs and other documentation;
- Archive all disaster recovery files with the appropriate jurisdictional agent following the conclusion of the disaster period; and
- Manage the State or Federal single audit of the disaster.

4.4.3 Departmental Point of Contact

Each department within the jurisdiction that has expended funds or suffered damage will identify a single point of contact for recovery operations. The name, title, work phone number and home phone number of this point of contact will be provided, in writing, to the Recovery Coordinator/Manager within 24 hours of activation of the Operational Area Recovery Plan (OA Recovery Plan). The responsibilities of the departmental point of contact are as follows:

- Gather information for their department concerning damage and/or expenditures;
- Answer questions regarding departmental damage and/or expenditures;
- Coordinate with the Recovery Manager for damage site visitations by State, Federal or private sector organizations (e.g. Red Cross); and,
- Ensure appropriate documentation on each damage site or expenditure is gathered and submitted to the Recovery Manager.

4.4.4 Finance Division

For each emergency, the responsible official will appoint a departmental point of contact from the finance division/department who will be responsible for the following jurisdiction-wide activities:

- When requested, provide copies of all financial documents or reports (pay sheets, checks, etc.) regarding damage and expenditures to the Departmental Point of Contact or Recovery Manager;
- Generate necessary financial reports such as payroll records; and,
- Assist the Recovery Manager with the State or Federal audit.

4.5 Utilities

4.5.1 San Diego Gas and Electric (SEMPRA)

The utility shall prepare an emergency response plan setting forth anticipated responses to emergencies and major outages. The plan will help assure the utility is best able to protect life and property during an emergency or major outage and communicate the scope and expected duration of an outage. The plan shall include the following elements:

4.5.1.1 Internal Coordination

- The plan shall describe the utility's internal coordination function, including how the utility will gather, process, and disseminate information within the service area, set priorities, allocate resources and coordinate activities to restore service. The utility will coordinate internal activities in an emergency operations center or use some other arrangement suitable for the purposes of internal coordination.

4.5.1.2 Media Coordination

- The plan shall address the utility's provision of timely and complete information available to the media before, during and immediately after a major outage. Such information shall include estimated restoration times and a description of potential safety hazards if they exist.
- The communications strategy shall describe how the utility will provide information to customers by way of its call center and other communications media before, during and immediately following a major outage. The strategy shall anticipate the use of radio, television, newspapers, mail and electronic communications media.

4.5.1.3 External and Government Coordination

- The plan shall address the utility's efforts to coordinate emergency activities with appropriate state and local government agencies. The utility shall maintain lists of contacts at each agency that shall be included in the plan and readily accessible to

employees responsible for coordinating emergency communications. The utilities may address the use by governmental agencies of California's SEMS.

- The communications strategy shall include pre-event coordination with appropriate state and local government agencies, including the appropriate methods for information exchange, to enhance communications activities during and immediately following a major outage.

4.5.1.4 Damage Assessment

- The plan shall describe the process of assessing damage and, where appropriate, the use of contingency resources required to expedite a response to the emergency. The plan will generally describe how the utility will set priorities, facilitate communication, and restore service.

4.5.1.5 Restoration Priority Guidelines

- The plan shall include guidelines for setting priorities for service restoration. In general, the utility shall set priorities so that service is restored first to critical and essential customers, and so that the largest number of customers receives service in the shortest amount of time.
- Within one hour of the identification of a major outage, the utility shall begin coordinating its internal resources as set forth in its emergency plan.

4.5.1.6 Mutual Assistance

- The plan shall describe how the utility intends to employ resources available pursuant to mutual assistance agreements for emergency response. Mutual assistance shall be requested when local resources are inadequate to assure timely restoration of service or public safety. Mutual assistance does not need to be requested if it would not substantially improve restoration times or mitigate safety hazards. The plan shall recognize the need to communicate mutual assistance activities with the State Office of Emergency Services, through the UOC/OES Utility Branch, during an emergency
- No later then 4 hours after the onset of a major outage, the utility shall begin the process of evaluating and documenting the need for mutual assistance. The utility is not required to seek assistance if it would not substantially expedite restoration of electric service or promote public safety. The utility should reevaluate the need for assistance throughout the period of the outage.

4.5.2 San Diego County Water Authority

The Water Authority is a public agency serving the San Diego region as a wholesale supplier of water. The Water Authority works through its 24 member agencies to provide a safe, reliable water supply to support the region's $150 billion economy and the quality of life of 3 million

residents. In the event of an emergency incident resulting in an interruption of water supply and distribution, the Water Authority and its member agencies are prepared to respond and restore water supply and service.

4.5.2.1 Emergency Operations Plans

- Each agency has a written emergency operations plan. The Water Authority and member agencies meet quarterly to discuss coordination, emergency preparedness, and response issues. Annually, the Water Authority holds emergency response exercises focused on interagency coordination that includes member agency, regional, and state agency participation.

4.5.2.2 Communications and Response

- The Water Authority is a member of the Operations Section of the San Diego County Unified Disaster Council. The Water Authority shares a seat with SDG&E at the San Diego County Office of Emergency Services' Emergency Operations Center (EOC) and when activated, sends a liaison to the County EOC to provide a communication link to the county from its member agencies and the Water Authority. In addition, the Water Authority and member agencies participate in a radio communication network that would be activated when all other forms of communication are inoperable.

4.5.2.3 Mutual Aid

- The Water Authority and member agencies have signed mutual aid agreements and maintain a list of resources that could be loaned during an emergency incident. The Water Authority has also signed mutual aid agreements with regional water agencies and the major water supplier for the region, Metropolitan Water District, and meets quarterly with the regional agencies to discuss emergency preparedness and response. In addition, the Water Authority participates in the California Water Agency Response Network (Cal-WARN), a statewide mutual aid organization for water agencies.

4.5.2.4 Water Supply

- The Water Authority is embarked on a water storage emergency preparedness project scheduled to be completed in 2011. The Emergency Storage Project (ESP) is a system of reservoirs, interconnected pipelines, and pumping stations designed to make water available to the San Diego region in the event of an interruption in imported water deliveries. The additional capacity of this project is projected to meet the county's emergency needs through at least 2030. The member agencies have committed to having the ability to operate off the Water Authority supply for a ten-day period for maintenance purposes. The ESP, when completed, will supply water to the member agencies over a three to six month period as facilities and transportation lines are restored.

4.5.3 AT&T

AT&T's National Security Emergency Preparedness (NSEP) disaster prevention, response and recovery program outlines strategies and procedures that insure the company's ability to plan for, respond to and recover from emergencies or disasters.

4.5.3.1 Emergency Centers

- AT&T Emergency Centers are designated as either an EOC or Local Response Center (LRC). EOCs, as part of AT&T's agreement with the Federal Government, are mandated centers under the control of the AT&T NSEP organization whereas LRCs are the responsibility of the local Area, Region, or State Network Services organization. These centers serve as emergency command and control locations developed for the purpose of having a designated site, which in the event of an emergency or disaster are equipped to house a team trained in emergency response and recovery techniques.
- The EOC and LRC personnel have similar designated duties that include, but are not limited to:
  - Assess and compile damage information
  - Prioritize and re-prioritize restoration efforts
  - Arrange for additional staff to facilitate service restoration
  - Provide guidance and coordination of service restoration activities
  - Reconstitute the network
  - Disseminate damage reports and alerts
  - Communicate internally and externally status of event, efforts underway and expected time frame(s) to complete service restoration
  - Document service restoration efforts
  - Debrief after each emergency, review actions taken and make recommendations for improvement
  - Maintain up to date contact lists, pre-plan and response checklists

4.5.3.2 Restoration Priorities

- The clearing of trouble and service impairments caused by normal wear, accident, fire, storm, etc. is a common occurrence in telephone company operations. When the severity or impact of events develops into a major emergency the concentration of resources and the ability to facilitate timely restoration may require the prioritization

of service restoration and the emergency provisioning of service to support restoration efforts or in response to emergency needs.

- It is of primary importance that FCC mandated Telecommunications Service Priority (TSP) system procedures, which were developed to ensure priority treatment for our most important telecommunications services, be followed for both the restoration and provisioning of critical Federal, State and Local services. When a locality or State has an order declaring it a major disaster, extraordinary situation or other emergency, the restoration and provisioning of telecommunication services will be in accordance with the Federal Response Plan and TSP procedures.

4.6 Community Based Organization and Private Agency Resources

CBOs and other private agencies differ in size, organizational structure, and capacity, but all share a common bond of addressing the disaster concerns of individuals and special needs communities. The Operational Area will establish coordination with CBOs and other private agencies with multi-jurisdictional or countywide recovery roles during short-term recovery operations.

4.6.1 2-1-1 Information Line

2-1-1 is the new national dialing code for free, 24-hour community, health and disaster information. Like 9-1-1 for emergency service, 2-1-1 has been set aside by the Federal Communications Commission (FCC) for the public to easily access community information. Callers receive personalized information from a live phone specialist who can answer questions about a variety of nonprofit services and agencies. In times of disaster, 2-1-1 can be mobilized as a central point for disseminating public information. After the danger has passed, 2-1-1 helps victims secure recovery assistance.

4.6.2 American Red Cross (ARC)

The ARC provides for the critical needs of individuals such as food, clothing, shelter, and supplemental medical needs. Other assistance to individuals such as furniture, home repair, home purchasing, essential tools, and some bill payment may also be provided through this organization. The ARC also assists local jurisdictions by conducting preliminary damage assessment “windshield surveys” in all portions of the Operational Area, within 24 hours, as situation and resources allow. Detailed damage assessments can be available to the community within 72 hours.

4.6.3 International Conference of Building Officials

Coordinates implementation of the Model Disaster Preparedness and Response Plan of the San Diego Chapter of the ICBO to include coordination of field survey teams and damage assessment inspections/reports.

4.6.4 Salvation Army

The Salvation Army may provide recovery assistance through its mobile feeding, emergency shelter, applicant registration, collection and distribution of clothing and supplies, counseling, language interpretation, and assistance in locating missing persons.

4.6.5 San Diego and Imperial Counties Voluntary Organizations Active in Disaster (SDIVOAD)

SDIVOAD exists to foster better service to communities struck by disaster. This is done through preparedness activities that include planning among SDIVOAD members and providing education to the general public, and by responding to and helping communities recover from disaster. This is accomplished by adhering to four core values: Cooperation, Communication, Coordination and Collaboration.

4.6.6 Volunteer San Diego

All Spontaneous Volunteer coordination in the Operational Area will be directed through Volunteer San Diego, a member of the SDIVOAD. Providing a central organization will assist in the influx of volunteers, avoid convergence of individuals, and facilitate short-term recovery.

4.6.7 Faith-based Organizations

Faith-based organizations such as Catholic Charities, Jewish Family Services, and Lutheran Disaster Relief provide a variety of disaster-related services to victims and disaster workers to aid in personal recovery or relief operations.

4.7 State Agencies

4.7.1 Office of Emergency Services

- Coordinates State and Federal resources to aid in disaster recovery for individuals, families, farmers, certain private non-profit (PNP) organizations, local and state government.
- Coordinates requests for State and Federal emergency declarations.
- Participates in damage assessments.
- Provides environmental/historical, engineering and technical assistance.

- Administers State and Federal public assistance and hazard mitigation grants, including payment and processing.
- Provides program oversight of other state-administered disaster recovery.
- Leads community relations' elements in times of disaster.
- Coordinates the establishment of Joint Field Offices (JFOs), Disaster Resource Centers (DRCs), and LACs.

4.7.2 California Department of Transportation (CALTRANS)

CALTRANS provides reports and estimates on state roads, highways and freeways, including all overpasses, underpasses and bridges.

4.7.3 California Highway Patrol (CHP)

Provides initial reports on damage to roads, highways and freeways. Coordinates with CALTRANS and local jurisdictions as applicable to barricade or secure unsafe sections of roadway. Monitors truck traffic to ensure safe transport of debris during debris removal and demolition operations. Coordinates reentry of displaced populations per the County's Re-Entry Protocol (see Appendix G).

4.7.4 California Environmental and Natural Resources Agencies

Jurisdictions and special districts will be required to coordinate with a number of California environmental and natural resources agencies during recovery. Some of these agencies include the Coastal Commission, Resources Agency, Environmental Protection Agency, Conservation, Fish and Game, and Integrated Waste Management Board

4.7.5 State Board of Equalization

This agency provides tax relief services that may allow for the transfer of tax basis to another property, exemptions for property losses, and deferment of a tax bill until the damaged property can be surveyed to reflect its value following a disaster.

4.7.6 Franchise Tax Board

Following proclamation of a State of Emergency by the Governor, the Legislature authorizes the acceptance of casualty loss deductions within the California tax returns of those affected.

4.8 Federal Agencies

The overall responsibility for recovery rests with State and local governments. The National Response Plan (NRP) recognizes the primacy of State and local governments in defining response and recovery requirements and identifying needs. The Federal Government's primary

role is to complement and supplement State, local and private resources to facilitate recovery. Specific Federal roles are listed below:

4.8.1 FEMA

- FEMA receives reports and requests from State OES.
- Coordinates with local and State OES response of federal inspectors and officials, Federal Agency Support Teams (FAST).
- Determines eligibility and provides federal recovery assistance through the Public Assistance (PA) and Individual Assistance (IA) programs.
- Establishes a JFO to coordinate inter-agency recovery following certain declared disasters.
- FEMA coordinates disaster relief efforts of local and State government agencies as well as other Federal agencies.
- Establishes DRCs to coordinate service delivery to individuals and households.

4.8.2 Department of Housing and Urban Development

- Coordinates with FEMA and local housing authorities. Supports and oversees local housing authority in public outreach, counseling, and having a presence at all recovery assistance centers.

4.8.3 Emergency Support Functions

Emergency Support Functions (ESFs) provide the structure for coordinating Federal interagency support for Incidents of National Significance. The ESF structure includes mechanisms used to provide Federal support to local, State, tribal governments, or to Federal departments and agencies, both for declared disasters and emergencies under the Stafford Act and for non-Stafford Act incidents. ESFs are groupings of government and certain private-sector capabilities into an organizational structure to provide the support, resources, program implementation, and services that are required to save lives, protect property and the environment, restore essential services and critical infrastructure, and help victims and communities return to normal, when feasible, following domestic incidents. Per the NRP, each ESF has an identified ESF coordinator as well as primary and secondary support agencies. A description of each ESF is provided in Appendix H.

4.9 Private Sector

Memorandum of Understanding(s)/Memorandum of Agreements(s) (MOUs/MOAs) with the private sector allows for effective mobilization and effective resource management.

4.9.1 Chamber of Commerce

With more than 3,000 members, the San Diego Regional Chamber of Commerce will play an important role in economic recovery efforts within the Operational Area.

4.9.2 Ironworker Disaster Response Team

Ironworkers Local 229 build major bridges and large structures throughout San Diego County. Ironworkers train on Occupational Safety and Health Administration (OSHA) worker safety, Welding, Structural Steel Assembly, Rigging, Post Tensioning, Pre-Cast assembly and Reinforcing. One of their new roles is to provide Safety and Health training for workers responding to catastrophic events as skilled support personnel. Local 229 will be willing to assist with the following and have the following training:

4.9.2.1 Safety

- OSHA 10 Hour
- Forklift Operator Training
- First Aid/CPR

4.9.2.2 Qualified Riggers

- Calculate load weights
- Identify and use of correct size wire rope and synthetic slings
- Inspect slings

4.9.2.3 Certified Welders

- Weld on structural steel (high strength to mild steels)
- Cut with OxyAct Torches
- Certified on multiple processes
  - SMAW
  - GMAW
  - GTAW
  - FCAW
- Trained on Plasma Torches

4.9.2.4 Structural Assembly

- Assemble and disassemble major building components:
  - Columns
  - Beams
  - Truss
  - Joists
  - Pre-Cast Members
- Qualified to hand and phone signal a crane
- Use of personal fall arrest systems

4.9.2.5 Reinforcing Steel

- Correctly place re-bar in all major buildings
- Stress and un-stress post tensioning cables

4.9.3 Hotel and Motel Association

The San Diego County Hotel-Motel Association is a federation of hotel and motel owners and operators representing approximately 24,000 rooms in lodging establishments throughout the county. Lodging needs during the recovery phase of the disaster will be coordinated through the Hotel-Motel Association.

4.9.4 Renters Association

During normal business hours within the first 24 – 48 hours, the Renters Association can provide apartment vacancy information and the rates of existing vacant units.

Table 4.1
County of San Diego Roles and Responsibilities Matrix

		Finance & Gen. Govt.							PSG							HHSA				LUEG							CSG				External Support Agencies										
Agency Responsibilities Primary and Support Functions	**DEPTS./AGENCIES**	Board of Supervisors	CAO/ACAO/DCAOs	Assessor	Auditor and Controller	Chief Technology Office	County Counsel	Human Resources	Media & Public Relations	Public Safety Exec. Office	Office of Emergency Services	Sheriff	District Attorney	Medical Examiner	Probation	RACES	HHSA	Public Health Services	Behavioral Health Services	Emergency Medical Services	Agriculture	Air Pollution Control District	Environmental Health	Parks and Recreation	Planning and Land Use	Public Works	Veterinarian	Animal Services	General Services	Housing & Comm. Develop.	Purchasing & Contracting	Area Fire Coordinator	California Highway Patrol	American Red Cross	County Office of Education	Salvation Army	Volunteer San Diego	Humane Society	San Diego Gas & Electric	2-1-1 San Diego	County Water Authority
FUNCTIONS/RESPONS.																																								
Policy		P																																						
Emergency Proclamations		P	S				S				S																													
Public Information/JIC		S				S			P		S	S		S			S	S								S					S							S		
Policy Group			P				P		S		P	P		S				P					S			S			S		P									
EOC Director										S	P																													
Rumor Control									S		S																												P	
Safety Officer											S							S					P																	
Legal Advisor							P																																	
Security (EOC)												S			P																										
OPERATIONS																																								
Section Chief											P	S						S													S									
Alert/Warning									S		P	P																			S									
Law Enforcement												P	S		S	S																S								
Evacuation												P															S				S	S				S				
Traffic Control												P													S							S								
Fire & Rescue											S												S							P									
Hazardous Materials																						P																	
Radiological Protection											P											S																	
Health																P	P																						
Medical Multi-Casualty												S		S		S	S		P												S	S								
Public Health																S	P		S																				
Behavioral Health																		P																					
Care and Shelter																P	P					S	S									P								
Animal Rescue															S		S								S		P									S				
Field Liaison											P				S	S																								
Utilities																												P									S		S
Construction and Engineering																									S	P														

P = Primary; S = Support

Table 4.1
County of San Diego Roles and Responsibilities Matrix (Continued)

		Finance & Gen. Govt.								PSG							HHSA				LUEG							CSG				External Support Agencies										
Agency Responsibilities Primary and Support Functions	**DEPTS./AGENCIES**	Board of Supervisors	CAO/ACAO/DCAOs	Assessor	Auditor and Controller	Chief Technology Office	County Counsel	Human Resources	Media & Public Relations	Public Safety Exec. Office	Office of Emergency Services	Sheriff	District Attorney	Medical Examiner	Probation	RACES	HHSA	Public Health Services	Behavioral Health Services	Emergency Medical Services	Agriculture	Air Pollution Control District	Environmental Health	Parks and Recreation	Planning and Land Use	Public Works	Veterinarian	Animal Services	General Services	Housing & Comm. Develop.	Purchasing & Contracting	Area Fire Coordinator	California Highway Patrol	American Red Cross	County Office of Education	Salvation Army	Volunteer San Diego	Humane Society	San Diego Gas & Electric	2-1-1 San Diego	County Water Authority
FUNCTIONS/RESPONS.																																								
PLANNING/INTELLIGENCE																																								
Section Chief										S	P				S																									
Situation Status										S	P				S	S							S	S																
Documentation										S	P				S																									
Technical Support																					S	S	S			S														
GIS											S														S	P														
Advanced Planning										S	P				S																									
LOGISTICS																																								
Section Chief											P																	S												
Supply/Procurement																												S		P										
Transportation												S																P												
Facilities																												P		S										
Personnel								P																																
EOC Support								P									S						S																	
Communications/IT						P					S	P				S																								
Volunteer Coordination								S																																
FINANCE/ADMIN.																																								
Section Chief										P	S																													
Time Unit										S	P																													
Compensation & Claims								S		S	P																													
RECOVERY*																																								
Recovery Lead											P															S														
Damage Assessment				S							S														P						S		S	S			S		S
Cost Accounting					P																																		
Donations Management																																					S		S	S			S	

*Activities may occur outside of EOC.
P = Primary; S = Support

5 OPERATIONS FUNCTIONS

5.1 Resumption of Local Government Operations

Resumption of local government operations is the foundation of short- and long-term recovery. Depending on the extent of damage after a disaster, governmental agencies may be forced to operate from widely scattered, makeshift locations with little or no notice, inadequate communications, shortages of supplies, staff and other limitations. Communications amongst agencies will be difficult; day-to-day interdepartmental processes will most likely be impeded; and the public may become frustrated and disoriented due to the lack of access to normal governmental services. Provisions for issues such as emergency relocation of government agencies and the reconstruction of public facilities should be addressed in local government plans.

5.2 Damage Assessment

5.2.1 Overview

Damage assessment is primarily a short-term recovery function that begins during the response phase and is the basis for determining the type and amount of State and/or Federal financial assistance that will be available to facilitate long-term recovery. The Operational Area EOC Standard Operating Procedure (SOP) requires that IDEs be completed during the emergency response phase to support a request for a gubernatorial proclamation and for the State to request a presidential declaration.

County of San Diego OES has the primary responsibility for damage assessment within unincorporated areas of the Operational Area. Incorporated cities have primary responsibility for damage assessment within incorporated areas of the Operational Area. The Building Division of the County Department of Planning & Land Use (DPLU) and the Assessor's Office are the two County departments that provide support in the Operational Area EOC.

5.2.2 Activation

Emergency operations are generally activated in three levels based on the severity and scope of the incident and the availability of resources. All affected agencies have predesignated personnel for responding either to the Operational Area EOC or in the field, during or immediately following an emergency. The damage assessment function is involved in all of the levels as listed on the following page:

LEVEL I
- The Operational Area EOC may or may not be activated.
- Damage assessments will be required.
- Personnel are contacted by the Damage Assessment Coordinator.

LEVEL II
- The Operational Area EOC will be activated.
- Field survey and inspection teams may be activated.
- Damage assessments will be required.
- Recovery phases will be initiated.
- The Operational Area Damage Assessment Team automatically responds to the EOC for initial damage reports. Field survey teams are contacted by the Field Survey Coordinator if needed.

LEVEL III
- The Operational Area EOC will be fully activated.
- Field survey and inspection teams will be fully activated.
- Full recovery phase will be initiated.
- Damage assessments will be required.
- All personnel needed for damage assessment automatically respond to either the Operational Area EOC or other predesignated locations.

5.2.3 Field Operations/Posting

Engineers and building inspectors, assigned as disaster inspectors, will conduct all damage assessments. Inspectors will be coordinated through the Building Division of the DPLU and inspections will be conducted in accordance with the following two documents:

1. Emergency Response and Damage/Safety Assessment – Standard Operating Procedures of the County of San Diego DPLU, dated July 2006.
2. Model Disaster Preparedness and Response Plan of the San Diego Chapter of the International Conference of Building Officials dated 1991.

Damage assessment occurs in three phases:

- Windshield Assessments: Under the direction of the Damage Assessment Field Supervisor, teams will conduct a quick survey of damaged areas for the purpose of estimating overall damage and reporting. The assessment teams count as many structures as possible and estimate the percentage of damage without leaving the vehicle.
- Detailed Assessments – Assessing the Structure: Upon completion of the Windshield Assessment, a detailed assessment of all impacted structures must be conducted. The Building Division uses the guiding principles of ATC-20 Rapid Assessments to determine whether a structure is safe, restricted in use, or unsafe.

- Detailed Assessments – Documentation and Posting: Once the structures on a property have been assessed, documentation and posting operations commence. The inspector must completely and accurately fill out one Damage/Safety Assessment Form for each property, recording all damage on the property. If directed by the Damage Assessment Field Supervisor, "saved" structures should also be documented. At the discretion of the area leader, post each inspected structure with the appropriate placard. Placard designations are as follows:

Placard Color	Placard Designation
Green	INSPECTED – Lawful Occupancy Permitted.
White	REPAIRS NECESSARY - (This Placard is for Residential Buildings Only)
Yellow	LIMITED ENTRY - Off Limits To Unauthorized Personnel
Red/Pink	UNSAFE - Do Not Enter Or Occupy

  Upon returning to the office at the conclusion of each damage assessment session, the inspectors will rename each of the photos taken to correspond with the damage assessment report number for the affected site.

The DPLU Building Division will maintain a written record of inspected damages in order to provide the information to the Operational Area EOC and Recovery Coordinator/Manager, Assessor's Office (property tax purposes) and insurance companies (assist in settlement claims).

5.2.4 Initial Damage Estimate Reporting

IDEs are derived from Windshield Assessments conducted by the County and each city and are submitted through the State's online reporting system, Response Information Management System (RIMS). RIMS is an internet-based reporting and information management system that employs pre-formatted reporting forms that are easily filled in by the jurisdiction/agency.

Damages are itemized on the IDE and then forwarded to the Operational Area. IDE cost estimates are based on current property values and building costs. Cost estimates may be requested from utilities, CALTRANS, and other public or quasi-public entities to facilitate damage assessment. Collected IDEs are condensed into one report for the Operational Area and forwarded to the OES Southern Region.

5.2.5 Preliminary Damage Assessments

The State will determine whether a recovery effort is beyond State and local capabilities from information provided in the Operational Area's IDE Report. If it is decided that disaster recovery is beyond State and local capabilities, State officials will ask the FEMA Regional Office to conduct a Preliminary Damage Assessment (PDA).

The PDA is a joint venture between local, State, and Federal governments to document the impact and magnitude of a disaster on individuals, families, businesses, and public property. After the PDA teams have documented the damage, the Governor will determine whether or not to request Federal disaster assistance. The Governor may limit the request for assistance or may seek full range of assistance authorized under the type of declaration being requested.

5.3 Contracting, Documentation, and Cost Recovery

5.3.1 Overview

The County OES and County Auditor and Controller coordinate cost recovery and contracting procedures for the jurisdictional area of the County of San Diego. Each incorporated jurisdiction and special district is responsible for developing and implementing cost recovery and contracting procedures individually.

The County OES applies on behalf of the County of San Diego's jurisdictional area to State OES and FEMA for disaster relief funds. Each incorporated jurisdiction and special district within the Operational Area also applies to State OES and FEMA for disaster relief funds. Documentation and contracting are critical cost recovery elements.

Cost recovery begins with expenditure of local funds, during the disaster's response phase, and ends with completion of applicable local, State or Federal auditing processes, which can occur well into the disaster's long-term recovery phase.

Recovery and procurement personnel should be familiar with the Department of Homeland Security Office of Inspector General document Audit Tips for Managing Disaster-Related Projects.

5.3.2 Notification of Recovery Coordinator/Director

Each department (county or city) is responsible for providing written notification to the Recovery Coordinator/Manager (county or city) anytime it is expected to expend funds for damage-related clean-up or repairs (labor, equipment or material costs) at any one site. This notification requirement is triggered when expenditures at any single site is expected to exceed a minimum threshold. (Jurisdictions may wish to establish pre-determined minimum/maximum expense limits that would similarly trigger notification requirements.) Notification should be made within 48 hours and must include the following information:

- Location of site, including Thomas Brothers map coordinates
- Description of damage
- Description of work to be performed
- Estimate of the cost to repair or replace the facility/equipment
- Name of contact for further information

Local jurisdiction and special district coordinators or, in the case of the County, the appropriate department(s); will utilize this information to complete the forms necessary to request State and Federal assistance forms.

5.3.3 Documentation

All County Departments and Operational Area jurisdictions and special districts are responsible for fully documenting recovery activities. The County Auditor and Controller prepares and maintains all supporting documentation with reference to cost recovery and eligibility for the County of San Diego. The categories of documentation required of County of San Diego departments are:

- Notification of Recovery Coordinator/Manager
- Site Documentation - Law Enforcement, Fire and Emergency Medical Services (EMS) activities
- Site Documentation - Damage and Clean-up
- Jurisdiction Labor Records
- Jurisdiction Equipment Records
- Rented Equipment
- Material Summary Records
- Contract Work Summary Record
- Emergency Contracting

5.3.3.1 Site Documentation for Law Enforcement, Fire, and EMS activities

Since the responsibilities assigned to Law Enforcement and Fire Departments often result in single site expenditures less than the minimum threshold amount, special reporting requirements apply to the following disaster related Fire, Rescue and Law Enforcement activities:

- fire incidents
- rescue incidents
- emergency medical services incidents
- community assistance incidents
- traffic control

Whenever the jurisdiction enters into a disaster period, all involved departments (Fire, Law Enforcement, Public Works, EMS) need to begin tracking all of the above responses and disaster-related expenditures. All equipment, material and overtime labor costs associated with these incidents are eligible for disaster reimbursement.

Each County Department will create a departmental file containing the following information:

- Name of contact for further information
- Copies of CAD incident histories for each disaster-related incident (regardless of whether only regular hour personnel responded)
- Copies of invoices and/or contracts for contracted/purchased materials, equipment or services
- Force account labor records
- Force account equipment records
- Material records
- Rented equipment records

The documentation is to be maintained and updated by the originating department and will be turned over to the Recovery Coordinator/Manager for processing when the State and Federal inspection teams arrive to complete the PWs.

5.3.3.2 Site Documentation for Infrastructure Damage and Debris Removal

For each site reported to local jurisdiction or special district emergency coordinators or, in the case of the County, the appropriate department(s); the originating department is required to create a damage site file containing the following information:

- Location of site, including Thomas Brothers map coordinates
- Description of damage
- Description of work to be performed
- Name of contact for further information
- Color photographs of damage (minimum of 2)
- Copies of invoices and/or contracts for contracted/purchased materials, equipment or services
- Copies of any departmental work management system reports (if utilizing this type of system)
- Force Account Labor Summary Records
- Force Account Equipment Summary Records

- Materials Summary Records
- Rented Equipment Summary Records
- Contract Work Summary Records
- Copies of any estimates or bids received

This damage site file is to be maintained and updated by the originating department and will be turned over to the Recovery Coordinator/Manager for processing when the State and Federal inspection teams arrive to complete the PWs.

5.3.3.3 Jurisdiction Labor Records

All work hours performed by the jurisdiction's employees must be recorded on either a Force Account Labor Summary Record or other written record containing the following information:

- Employee(s) name
- Employee(s) job title
- Synopsis of work performed at the site
- Date and number of regular hours
- Date and number of overtime hours worked
- Total number of regular hours worked
- Total number of overtime hours worked
- Employee(s) regular hourly salary
- Total regular hour cost
- Employees regular benefit rate (decimal format)
- Total regular hour and benefit cost
- Employees overtime salary rate
- Employees overtime benefit rate (decimal format)
- Total overtime hour and benefit cost
- Total regular hour and benefit cost for all employees at the site
- Total overtime hour and benefit cost for all employees at the site

Hours spent performing law enforcement, fire, and EMS duties can be listed on a department-wide (e.g. all law enforcement activities) Force Account Labor Summary Record if the total cost at a given site does not exceed the minimum threshold. Employee hours not submitted in the above format will be denied by State OES and FEMA and will not be reimbursed.

5.3.3.4 Jurisdiction Equipment Records

All jurisdiction equipment used must be recorded on either a Force Account Equipment Summary Record or other written record containing the following information:

- Shop number of equipment (e.g. F11, S40 or SD)
- Description of equipment (e.g. 5 ton dump truck, 1.5 CY Wheel Loader)
- Synopsis of work performed with equipment at site
- Horsepower of equipment
- Date and number of hours worked
- Pre-disaster hourly rate for equipment
- Total cost of equipment
- Total cost for all equipment at the site

Equipment is reimbursed based on rates established and implemented by the department, city or special district prior to the disaster. If the department, city or special district does not have formal equipment rates, FEMA rates can be used for reimbursement purposes. Equipment operated while performing fire, law enforcement, or EMS duties can be listed on a department-wide summary records (e.g. all law enforcement activities) if the site total does not exceed the minimum threshold. Equipment hours that involve disaster-related activities, with the exception of standby time, are eligible for reimbursement, regardless of whether the operator was on regular or overtime status. Equipment usage records not submitted in the above format will be denied by State OES and FEMA and will not be reimbursed.

Maintenance activities necessary due to the use of equipment to perform emergency or permanent work are not eligible. However, equipment damaged as a direct result of emergency response operations may be eligible for reimbursement and therefore shall be documented in accordance with Section 5.3.3.2 above.

5.3.3.5 Rented, Leased, or Purchased Equipment

All leased or rented equipment must be recorded on either a Leased or Rented Equipment Summary Record or other written record containing the following information:

- Description of equipment (e.g. 5 ton dump truck, 1.5 CY Wheel Loader)
- Horsepower of equipment
- Date and number of hours worked
- Hourly rate for equipment, both with and without operator
- Total cost of equipment as billed by vendor
- Vendor name

- Invoice number
- Date and amount paid by Jurisdiction
- Check numbers
- Total cost for all leased or rented equipment at the site

When a jurisdiction does not have sufficient equipment or supplies to respond effectively to the disaster, purchase of needed equipment and supplies may be eligible for reimbursement by FEMA. A written record containing the description of the purchased equipment and use, vendor name, invoice number or receipt, date and amount paid by jurisdiction, and proof of payment must be maintained. Equipment and supply purchases must be cost effective when compared to lease or rental options. Jurisdictions may be required to compensate FEMA for the fair market value of the cost of the equipment and supplies when the items are no longer needed for disaster-related operations.

Equipment costs that involve disaster related activities, with the exception of standby time, are eligible for reimbursement, regardless of whether the operator was on regular or overtime status. Equipment operated while performing the fire, law enforcement, or EMS duties can be listed on a department-wide summary records (e.g. all law enforcement activities) if the total cost at a given site does not exceed the minimum threshold.

Equipment costs not submitted in the above format will be denied by State OES and FEMA and will not be reimbursed.

5.3.3.6 Material Summary Records

All materials used by jurisdictional personnel at each site must be recorded on either a Materials Summary Record or other written record containing the following information:

- Date item used
- Description of item (e.g. minus 6" rock, flares, etc.)
- Quantity of item (e.g. 4 tons, 3 cases of 12)
- Unit cost of item
- Total cost of item
- Source of materials (pre-disaster stockpile or new purchase)
- If purchased, who was it purchased from?
- Total cost for all material used at the site

Materials used while performing fire, law enforcement, or EMS duties can be listed on a department-wide (e.g. all law enforcement activities) Materials Summary Record if the total cost

at a given site does not exceed the minimum threshold. All material costs that involve disaster-related activities are eligible for reimbursement. Material costs not submitted in the above format will be denied by State OES and FEMA and will not be reimbursed. Materials furnished and used by contract labor are to be listed with the Contract Account costs.

5.3.3.7 Contract Work Summary Record

Most costs associated with outside organizations providing clean-up or repair of disaster-related damage are eligible for reimbursement as contract work costs. For example, if minus 6" rock was purchased by the jurisdiction, trucked to a site in the jurisdiction's vehicles and placed into position by jurisdictional personnel, this should be listed on a Materials Summary Record in addition to Force Account Equipment and Labor Records.

However, if the same minus 6" rock was purchased by the jurisdiction and trucked to the site by an outside organization, or purchased and trucked by an outside organization, these costs would be considered contract work costs. Contract work costs must be documented on a Contract Work Summary Record or other written record, along with the following information:

- Name of outside organization (e.g. Roy Ladd Co.)
- Date(s) of service (beginning and ending)
- Description of service provided (e.g. clean-up and dispose of all debris on city/county streets, grounds)
- Quantity of service/item provided (e.g. 4 hours of Cat D-6 work with operator)
- Cost per hour per item
- Total cost of work performed at site or contract
- Copy of ATP or Purchase Order (PO) payment information
- Copy of bid(s) or estimate(s) received if the contracting was not for emergency work or did not utilize a standing PO

Contract work performing fire, law enforcement, or EMS duties can be listed on a department-wide (e.g. all law enforcement activities) Contract Work Summary Record if the total cost at a given site does not exceed the minimum threshold. Contract costs not submitted in the above format will be denied by State OES and FEMA and will not be reimbursed.

Each department must ensure that all bid documents or contractor submitted invoices are broken down to reflect the cost per category listed in Appendix B, Damage Assessment Categories. Work quantities and unit costs must be provided even if the contract is lump sum to facilitate cost reasonableness analysis as required for FEMA reimbursement. If the work was single category work (e.g. repair a sewer line), this can be considered a single category of work even if

it required excavating a street. This single category classification is based on the fact that the street was not damaged by the emergency, but rather was damaged by the need to repair the sewer line.

5.3.3.8 Donated Resource Summary Record

In Presidentially declared disasters, donated resources applied to actual eligible emergency work such as debris removal or the filling and placing of sandbags are eligible to offset the State and local cost share for emergency work (Categories A and B). Resources or materials provided by a Federal agency cannot be credited. The donated services must be documented on a Donated Resources Summary Record or other written record and must include a description of work and record of hours worked by work site.

Volunteer labor will be valued at the same hourly labor rate as a jurisdiction or special district employee performing similar work. If the jurisdiction or special district does not have employees performing similar work, then the rate should be consistent with those ordinarily performing the work in the same labor market.

The value for donated equipment should be determined by using the applicable FEMA equipment rate and multiplying it by the number of hours the piece of equipment was used to perform eligible emergency work. Standby time is not eligible for credit.

5.3.4 Contracting

The County of San Diego recognizes three types of disaster-related contracting:

- Standing PO
- Emergency contracting
- Permanent contracting

Contracted services or supplies performed/provided by organizations with a standing PO do not require competitive bidding (e.g. meals, repair of vehicles, etc.). No contracts are required and the rates charged must be at or less than those previously established (normal and customary). Leased or rented equipment costs are to be shown on a Leased or Rented Equipment Summary Record.

Each County Department is responsible for ensuring that all invoices submitted by the contractor for disaster-related work are broken down to reflect the cost per category listed in Appendix B, Damage Assessment Categories.

Contracts eligible for federal reimbursement must meet the following criteria:

- Must meet or exceed Federal and State procurement standards and follow local procurement standards if they exceed the Federal and State criteria;
- Prices must be reasonable; and
- Scope of work must be consistent with scope approved by FEMA as outlined in the obligated Project Worksheet.

The following contract-related documents should be maintained to facilitate federal reimbursement process:

- Contract;
- Requests for bids, proposals or quotes;
- Bid documents/specs;
- Bid advertisement;
- List of bidders; and
- Invoices, cancelled checks, purchase orders, and inspection records.

5.4 Debris Removal and Management

5.4.1 Overview

Major disasters can generate enormous volumes of debris in short periods of time. Debris clearance, removal and disposal operations must be implemented quickly to protect public health and safety of the local population. The County of San Diego Disaster Debris Recycling and Handling Plan is presented in Appendix I.

Debris removal and management within the County will be coordinated through the County OES Recovery Coordinator/Manager; however, each city and the County is responsible for disaster debris cleanup within their jurisdictional boundaries unless alternative arrangements are made. Information for debris handling and removal will be coordinated through the countywide 2-1-1 hotline that will refer residents to their appropriate jurisdiction's hotline and website. Standardized press releases and public information will be coordinated through the Joint Information Center (JIC) for recycling, household hazardous waste and debris handling. The speed of initial debris clearance, removal and disposal operations depends upon the depth of pre-disaster planning by Operational Area jurisdictions and special districts.

5.4.2 Recycling

Debris recycling processes are provided in the County of San Diego Disaster Debris Recycling and Handling Plan (see Appendix I). To conserve the regional landfill capacity and to follow the State policy to maximize all diversion options in order to reduce the amount of solid waste that must be disposed, it is the County's intent that disaster-related debris be recycled or centrally

held until they can be processed for maximum recycling. Recycling and processing costs are considered a cost of debris clearance if local debris management plans, existing prior to the disaster, provide for separate handling and cost accounting for disaster-created debris.

The County's Disaster Debris Recycling and Handling Plan is consistent with the California Integrated Waste Management Board (CIWMB) Disaster Debris Plan as well as FEMA's Debris Management Guide (FEMA 322). Local jurisdictions are encouraged to develop disaster debris plans as part of individual emergency operations plans.

5.4.3 Debris Clearance

Disaster debris may fall on roadways and block access to certain neighborhoods or communities. Clearance of this debris from roadways to allow the safe passage of emergency vehicles is a response function.

5.4.4 Curbside Debris Removal

Removal of debris located within public right-of-way is referred to as curbside debris removal. Debris may be placed within the right of way by the disaster or by residents and businesses as private lots are cleaned. Debris located within the public right-of-way is a threat to general public health and safety and its removal is considered a short-term recovery function.

5.4.5 Private Property Debris Removal

Private property debris removal (PPDR) is generally not eligible because it is the responsibility of the individual property owner. If the debris on private business and residential property is so widespread that public health, safety, or the economic recovery of a community is threatened, FEMA may fund PPDR, but FEMA must approve this activity in advance and all appropriate Rights of Entry (ROEs) must be secured.

5.4.6 Demolition

Demolition of disaster-damaged structures may be eligible for emergency work assistance if the work is necessary to:

- Eliminate an immediate threat to lives, public health, and safety.
- Eliminate immediate threats of significant damage to improved public or private property.
- Ensure the economic recovery of the affected community to the benefit of the community-at-large.

- Mitigate the risk to life and property by removing substantially damaged and associated appurtenances as needed to convert property acquired through a FEMA hazard mitigation program to uses compatible with open space, recreation, or wetlands management practices.

Removal of slabs or foundations and covering of pads and driveways that do not present a health or safety hazard (except for structures in a FEMA funded buyout program) is not eligible for reimbursement.

As with PPDR, demolition of private structures requires approval by FEMA prior to start of work and appropriate agreements with local governments to hold the Federal government free from damages due to performance of the work must be in place. Demolition also requires condemnation by an authorized local official in accordance with State and local law.

5.4.7 Direct Federal Assistance

When the State and local government lack the capability to perform or contract for eligible emergency work and/or debris removal under sections, Direct Federal Assistance (DFA) may be available for curbside debris removal, PPDR, demolition, or vessel salvage operations.

FEMA will provide DFA through a mission assignment to another Federal agency - upon request of the State - when the State and local government certify they lack the capability to perform or contract for the requested work. The duration of mission assignments for debris removal is limited to 60 days from the disaster declaration date. The Federal Coordinating Officer (FCO) may approve extensions for up to an additional 60 days, if a State or local government demonstrates a continued lack of capability to assume oversight of any debris removal mission.

5.5 Donated Resources Management

5.5.1 Overview

Resource management is a process that ranges from determining needs to finding and staging resources to meet those needs. Volunteer labor (organized or spontaneous), donated equipment and donated materials are types of resources that can facilitate short-term recovery. If managed effectively, donated resources can compliment recovery efforts and enable jurisdiction or special district personnel to focus on the immediate demands of the disaster. If managed poorly, donated resources can be a distraction and overwhelm or burden recovery efforts.

Because some donated resources can be credited against State or Federal cost share requirements for federal programs, use of these resources should be carefully documented in accordance with Section 5.3.3 of the OA Recovery Plan.

5.5.2 Volunteers

All volunteer activity within the Operational Area will be coordinated through Volunteer San Diego, a member of SDIVOAD. Providing a central organization will assist in the influx of volunteers, avoid convergence of individuals, and facilitate short-term recovery.
Disaster Service Workers (DSWs) registered prior to any single event should report to their organization which will coordinate with Volunteer San Diego for specific assignment.

Volunteers who spontaneously come forward to assist disaster response or recovery efforts can become registered as single-event DSW volunteers. Prospective DSW volunteers should be physically and mentally capable of performing duties to which they are assigned. Single-event DSW volunteers should be trained and work under official supervision. Registered volunteers will augment existing organizations as needed; however, assignments may be restricted and level of participation controlled. Emergency response and recovery personnel will refer spontaneous or convergent volunteers to Volunteer San Diego. Volunteer San Diego will receive volunteers, inform them of the DSW program, and assist them with the DSW registration process.

5.5.3 Equipment, Materials, and Goods

Following a disaster, there may be an influx of donated items from the residents of San Diego County and procedures to ensure the proper handling and dissemination of such items to those that have been affected by the disaster must be established. A potential means to develop this process is through a MOU between the County of San Diego OES and Goodwill Industries of San Diego.

The purpose of the MOU is to formalize a working relationship between Goodwill Industries and the County of San Diego OES for the mobilization and management of spontaneous donations that will be made by the residents of San Diego County following a disaster. The MOU provides a framework for cooperation between these organizations and allows OES to coordinate Goodwill Industries personnel and service facilities during these periods. The overall outcome of the MOU is an efficient and effective process for accommodating, organizing, and disseminating donated goods or the equivalent of to those individuals and families that been affected by a disaster.

2-1-1 San Diego will be the lead agency for information collection and dissemination following a disaster. Residents that want to donate financial resources or bulk items (i.e. water, diapers, etc) can call 2-1-1 to be directed to organizations that will be working directly with those affected by the disaster.

5.6 Assistance Centers

5.6.1 Local Assistance Centers

LACs may be activated to provide assistance to individuals. LACs provide a centralized location for services and resource referrals for unmet needs following an emergency or disaster. State and/or Federal funding may be available for LAC operations. Historically, LACs have proven to be a key factor for a successful recovery. LAC characteristics may include:

- resource facility for disaster information, services and programs
- community-based service facilities
- managed by local government
- staffed by PNPs, local, state and federal government, as appropriate.

If it is clear that a disaster is of sufficient scale to require Federal Individual Assistance (IA), LAC activation will be coordinated with Disaster Resource Center (DRC) activation to avoid functional duplication and ensure efficient and cost effective service delivery.

5.6.2 Family Assistance Centers

Family Assistance Centers (FACs) are facilities established by the American Red Cross (ARC) and operated in coordination with CBOs. FACs are locations where families can receive emergency funds for food, clothing, and emergency medical needs and be placed in temporary lodging if they have no other place to stay.

5.6.3 Disaster Recovery Centers

DRCs are established to facilitate recovery for individuals and businesses and are operated generally under the umbrella of FEMA's IA programs. The nature and requirements of a particular disaster will determine which services are provided through the DRC and how long they will be provided.

When a DRC is activated, FEMA assumes responsibility for acquiring and paying for the facility, utilities, telephone, child care, and other standard custodial functions. The State OES via the Southern Region and County OES will be responsible for coordinating staffing support functions for the agencies providing assistance.

5.7 Individual Assistance

Individuals are expected, whenever possible, to provide for themselves and be responsible for their own personal recovery. However, many individuals will need and expect the government to deliver assistance to them well after the disaster. Disaster aid to individuals generally falls into the following categories:

- **Individual Action Assistance** includes assistance provided to individuals and families by family, friends, volunteer organizations, churches, etc.
- **Insurance Recovery Assistance** includes assistance provided from private insurance carriers.
- **Disaster Housing Assistance** may be available for displaced persons whose residences were heavily damaged or destroyed. Funding also can be provided for housing repairs and replacement of damaged items to make homes habitable.
- **Disaster Grants** may be available to help meet other serious disaster related needs and necessary expenses not covered by insurance and other aid programs. These may include replacement of personal property, and transportation, medical, dental and funeral expenses.
- **Unemployment Space Assistance** may be available through the Federal Disaster Unemployment Assistance (DUA) program that provides unemployment benefits and re-employment services to individuals who have become unemployed because of major disasters.
- **Low-Interest Disaster Loans** may be available after a disaster for homeowners and renters from the U.S. Small Business Administration (SBA) to cover uninsured property losses. Loans may be for repair or replacement of homes, automobiles, clothing or other damaged personal property. Loans may also be available to businesses for property loss and economic injury.
- **Other Disaster Aid Programs** that include crisis counseling, disaster-related unemployment assistance, legal aid and assistance with income tax, Social Security and Veteran's benefits. Other State or local help may also be available.

Federal and State disaster assistance programs will only be available following declared or proclaimed major disasters. The objective of the Operational Area, its jurisdictions and special districts is to provide residents with all the necessary information to help them recover from the disaster. Operational Area jurisdictions and special districts will assist individuals in any way possible, including providing them with FEMA IA hotline number or directions to and phone numbers for operating LACs or FACs.

FEMA IA is organized under the JFO Operations Section, Human Services Branch. The Individuals and Households Program is the primary programmatic vehicle used by FEMA IA to provide housing assistance to disaster victims. The program aims to address disaster-related housing and other necessary expenses and serious needs, which cannot be met through other

forms of disaster assistance, insurance, or through other means. FEMA has prepared the following guide: Help After a Disaster - Applicant's Guide to the Individuals and Households Program.

Housing assistance and eligibility requirements include:

- Temporary Housing Assistance: Proof of residency; disaster caused displacement, and/or paid receipts for transient accommodations;
- Primary Residence Repair: Proof of residency and ownership; disaster related home damage;
- Primary Residence Replacement: Proof of residency and ownership; home destroyed by the disaster; and
- Permanent Housing Construction: Proof of residency and ownership; disaster related home damage, home is located in an insular area outside the continental United States or in other remote locations. Alternative housing resources are unavailable, infeasible, or not cost-effective.

IA housing functions specific to short-term recovery operations begin with the placement of sheltered or evacuated individuals into temporary housing. Temporary housing is defined as non-shelter housing for individuals and households lasting between three weeks and six months. Depending on the scale of the disaster and the degree of displacement of County residents, temporary housing operations may extend into the long-term recovery phase of the disaster. Housing that lasts longer than six months is referred to as interim housing and is typically reserved for residents whose homes were destroyed beyond repair.

Other need-based assistance and eligibility requirements include:

- Medical: Disaster caused expenses, and/or paid receipts (bills) for medical treatment;
- Dental: Disaster caused expenses, and/or paid receipts (bills) for treatment;
- Funeral: Disaster caused expenses, and/or paid receipts (bills) for services;
- Personal Property: Proof of ownership; disaster related personal property damage;
- Transportation: Proof of ownership; vehicle complies with State laws, disaster related vehicle damage; and
- Other Necessary Expenses and Serious Needs Identified: Expense or need must be caused by the disaster and approved by FEMA.

5.8 Public Assistance

5.8.1 Overview

Public assistance refers to disaster assistance provided to public agencies and certain private non-profit entities to restore community infrastructure and services.

Cost recovery is achieved through Federal and State public assistance programs. The Stafford Act limits FEMA's ability to provide disaster assistance to some public agencies or for some public facilities when the statutory responsibility to provide disaster assistance belongs to another Federal agency. For example, the Federal Highway Administration (FHWA) has primary responsibility for repairs to Federal Aid System (FAS) roadways, not FEMA.

Each jurisdiction and special district has the responsibility for completion and submittal of the required documents for both State and Federal public assistance programs. County OES will complete the necessary public assistance program application and supporting materials for the County. The OA Recovery Coordinator/Manager will also serve as the primary contact for State and Federal field representatives. Respective local Recovery Managers will complete the application process and provide supporting materials to State and Federal representatives. Special districts will typically assign representatives from their accounting offices to complete application materials and coordinate with State and Federal representatives.

Documentation of disaster-related costs incurred from response through long-term recovery is essential to the cost recovery function. Although public assistance PWs may be written during a disaster's incident period, PWs for emergency work are usually completed during the short-term recovery phase of the disaster, while PWs for permanent repair or restoration are not written until the disaster enters the long-term recovery phase.

5.8.2 FEMA Public Assistance

FEMA provides supplemental Federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain PNP organizations through the Public Assistance (PA) Program. The PA program is administered through a coordinated effort between the FEMA, the State as grantee, and local government or special district applicants as subgrantees. FEMA PA is organized under the JFO Operations Section, Infrastructure Support Branch.

Activities generally eligible for reimbursement include overtime labor hours associated with emergency response operations, equipment usage for response and recovery operations, and repair costs for public facilities. Categories of work are defined in Appendix B, Damage Assessment Categories. Disaster-related costs are documented by FEMA in PWs.

PA assistance is conditioned upon compliance with all applicable Federal, State, and local laws and is provided on a cost-share basis that can vary depending on the scope of the disaster. The Federal PA program is explained further in Appendix F, FEMA Public Assistance Program, and the following FEMA publications:

- Applicant Handbook (FEMA 323)
- Public Assistance Policy Digest (FEMA 321)
- Public Assistance Guide (FEMA 322)

5.8.3 National Resources Conservation Service Emergency Watershed Protection Program

The National Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) program is designed to undertake emergency measures, including the purchase of flood plain easements, runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed.

5.8.4 Rehabilitation and Inspection Program

The Rehabilitation and Inspection Program is the U.S. Army Corps of Engineers' (USACE) program that provides for inspection of flood control projects, the rehabilitation of damaged flood control projects, and the rehabilitation of Federally authorized and constructed shore protection projects. Inspection of non-Federal flood control works are accomplished under provisions of PL 84-99. Projects initially constructed by the USACE, including shore protection projects, and turned over to the local sponsor for maintenance are inspected under authority of the Inspection of Completed Works (ICW) program. Should an eligible project require rehabilitation as a result of damage from a significant flood or storm event, project rehabilitation would be accomplished under provisions of PL 84-99.

5.8.5 Federal Highway Administration Emergency Relief Program

FHWA Emergency Relief (ER) program is for the repair or reconstruction of Federal-aid highways and roads which have suffered serious damage as a result of natural disasters or catastrophic failures from an external cause. This program supplements the commitment of resources by States, their political subdivisions, or other Federal agencies to help pay for unusually heavy expenses resulting from extraordinary conditions.

The applicability of the ER program to a natural disaster is based on the extent and intensity of the disaster. Damage to highways must be severe, occur over a wide area, and result in unusually high expenses to the highway agency. Applicability of ER to a catastrophic failure due to an external cause is based on the criteria that the failure was not the result of an inherent flaw in the

facility but was sudden, caused a disastrous impact on transportation services, and resulted in unusually high expenses to the highway agency.

5.8.6 Public Housing Authority (PHA) Disaster Assistance

HUD will provide funding from the capital public housing reserve authorized by section 9(k) of the United States Housing Act of 1937, authority, as amended [42 U.S.C. 1437g(k)], or similar statutory authority, subject to the availability of appropriations. Each PHA that incurs damage in excess of insurance coverage and FEMA assistance for debris removal and emergency work from a Presidentially declared disaster is responsible for submitting a funding request to HUD.

5.8.7 US Department of Agriculture Emergency Loans

The US Department of Agriculture's (USDA) Farm Service Agency (FSA) provides emergency loans to help producers recover from production and physical losses due to drought, flooding, other natural disasters, or quarantine. Emergency loan funds may be used to:

- Restore or replace essential property;
- Pay all or part of production costs associated with the disaster year;
- Pay essential family living expenses;
- Reorganize the farming operation; and
- Refinance certain debts

5.8.8 Community Disaster Loans

Community Disaster Loans (CDLs) may be available to Operational Area jurisdictions and special districts following major or catastrophic disasters. The jurisdiction must have suffered a substantial loss (generally in excess of five [5] percent) of tax or other revenues as a result of a major disaster and must demonstrate the need for Federal assistance to perform its governmental functions. The amount of the loan shall not exceed 25 percent of the annual operating budget of the locality for the fiscal year of the disaster, typically up to a maximum of $5,000,000.

Loan proceeds must be used to maintain existing governmental functions or to expand such functions to meet disaster-related needs. The loan cannot be used for capital improvements, the repair or restoration of damaged public facilities, or to pay the local cost-share of any Federal program. If the jurisdiction has not fully recovered economically from the disaster after three (3) fiscal years, all or part of the loan may be converted to a grant.

5.8.9 California Disaster Assistance Act Program

The California Disaster Assistance Act (CDAA) Program is the State disaster program for local government and special district agencies. Although CDAA is comparable to FEMA's PA program, state agencies and PNPs are not eligible. The CDAA program may be implemented as

a "stand alone" funding source following State OES Director's concurrence with a local emergency or Governor's state of emergency proclamation when there is no federal declaration. The CDAA program may provide reimbursement for disaster-related costs including emergency response, emergency protective measures, and restoration of public infrastructure. Categories of eligible work are defined in Appendix B, Damage Assessment Categories.

5.9 Hazard Mitigation

5.9.1 Overview

Hazard mitigation is defined as any action taken to reduce or eliminate the long-term risk to human life and property from natural or man-made hazards. Section 409 of Public Law 93 288 requires that the State or local government recipients of Federal aid evaluate the natural hazards of the area in which the aid is to be used and take action to mitigate them, including safe land use and construction practices.

To be effective, hazard mitigation actions must be taken in advance of a disaster. The San Diego County Multi-Jurisdiction Hazard Mitigation Plan (March 2004) is regularly updated and will enable jurisdictions to set appropriate hazard mitigation priorities.

After disaster strikes, there are mitigation opportunities that exist only during the short-term recovery phase and even those opportunities can be limited by the absence of advance planning. Nevertheless, the immediate post-disaster period does present special opportunities for mitigation. Section 409 deals with the opportunities presented in a current disaster to mitigate potential hardship and loss resulting from future disasters. Thus, hazard mitigation is a continuing year-round effort and activity in which all local communities and State agencies are encouraged to prepare hazard mitigation plans that identify ways to reduce damage caused by disasters. Hazard mitigation activities can be divided into the following categories:

- Prevention
- Property protection
- Public education and awareness
- Natural resource protection
- Emergency services
- Structural projects

5.9.2 Hazard Mitigation Actions

5.9.2.1 Avoid the Hazard

Authority to Zone

Zoning is usually a function of local government, except where State or Federally owned lands are exempt from local zoning laws. Other interests may propose zoning regulations but only local government can adopt them. By mutual agreement, State or Federal restrictions may be locally adopted and enforced.

Limitations: Zoning can be useful but its powers are limited. Therefore, zoning usually reflects, rather than dictates, current land use trends. Zoning is also particularly vulnerable to political pressure; this is particularly true if an area is very attractive for development but rarely experiences major disasters. Zoning is generally best suited to restrict the use of smaller areas (such as very steep slopes) within larger areas, as opposed to restricting large areas (such as areas of potential earthquake shaking).

Improve Building Standards

Buildings in hazardous areas can often be made safe. This can be as simple as adding a fireproof roof or it can mean tearing the building down and starting over.

Local Standards: Building codes are usually a function of local government, except where State or Federal buildings are exempt from local codes. Codes can be strengthened for hazardous areas. Usually stronger codes are enforced only for new construction or remodeling; but some recent laws require hazard related inspections for existing buildings that are considered at risk. The idea is that inspections will produce a knowledge of liability which will motivate the owners to improve their buildings.

For decades, the County has worked with fire agencies, planners, environmental experts and the building industry to craft codes that are responsive to the wildfire challenge. Since the 1980's, the County's fire codes have been strengthened in successive code adoption cycles with the primary goal of protecting the safety of our citizens and enhancing the home’s ability to survive wildfire. Although such measures protected many homes located within the areas impacted by the 2003 wildfires, lessons learned from the devastating wildfires of 2003 resulted in further refining of the codes, which became effective August 13, 2004.

State Standards: For State owned facilities outside the jurisdiction of local governments, construction standards are adopted and enforced by the responsible State agency. In some cases, these standards may serve as models for local governments.

Conditions for Assistance

As a condition for State approval of loan or grant assistance due to a major disaster or Emergency Declaration, the Governor's authorized representative may recommend to the FEMA Regional Director that the Associate Director prescribe certain construction standards for FEMA assisted projects for hazard mitigation purposes.

The FEMA Regional Director can suspend or refuse to approve any project application until it is confirmed that the work will result in a facility or structure that is safe for its intended use.

A Federal agency may require local or State governments to adopt and enforce certain hazard mitigation regulations as a condition for Federal assistance or participation in Federally assisted programs. Federal agencies adopt and enforce Federal standards for Federal buildings. In some cases, these Federal construction standards may serve as model standards for State and local governments.

5.9.2.2 Reduce the Hazard

The hazard itself can be reduced. Of course, this depends on the type of hazard: double containment of a storage tank will reduce the hazard from the chemical inside, but hazard mitigation cannot stop an earthquake or a storm.

Public Education

If the general public knows what to do before, during and after a disaster, the impact of the disaster can be greatly reduced. Public education is largely a local function, although the State and Federal governments do make a variety of educational materials available.

Insurance

Although insurance cannot reduce the impact of a disaster, it does spread that impact over a larger group of people over a longer period of time. Some insurance programs are private, and some, such as the Federal flood insurance program, are government funded. Insurance companies may have construction standards and fire protection standards that must be met before insurance is sold.

5.9.2.3 After a Disaster

Agreement to Work Together

Following each Presidential emergency declaration or major disaster, the Regional Director of the FEMA and the Governor execute a document called the Federal/State Agreement. This Agreement includes hazard mitigation.

The Mitigation Team

Federal, State, and local Hazard Mitigation Coordinators will be appointed to work together to:

Look for Hazards

The Team will review reports, visit the site and talk to concerned parties. The Team will review land use laws, construction standards, mitigation measures, damage assessments, PWs and other information. As a result of its findings, the Team may change the boundaries of high hazard areas and recommend mapping or re-mapping of these areas.

Review Emergency Plans

For each hazard prone area, the Team will review local and State emergency plans. Where plans for hazard mitigation are inadequate, the team will recommend improvements. The FEMA Regional Director and the Governor's authorized representative may decide to require that these improvements be made. They will consider:

- If hazard mitigation could be effective.
- The size and composition of the jurisdiction.
- Local government's authority to regulate land use and construction practices.
- The local government's exercise of such authority.
- They may also help governments write or update their plans.

Write a Mitigation Plan

The Plan will make recommendations and will include procedures for carrying out the recommendations. The Plan is due within six months of a Presidential declaration. The following Federal hazard mitigation programs should be considered in the Mitigation Plan:

- Hazard Mitigation Grant Program (HMGP): Also referred to as Section 404 Hazard Mitigation, this program provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Funds are provided on a cost-share basis, are awarded competitively and can be used on any preventive measure but the applicant must be located in a declared County.
- Flood Mitigation Assistance (FMA): Yearly funds used in the acquisition, relocation, and demolition of repetitive loss properties through-out the state. Mitigated structures or facilities must have sustained flood damage and funds are available on a cost-share basis.

All projects must be submitted through the local government to the State Hazard Mitigation Officer (SHMO) and recommended by the State Hazard Mitigation Team (SHMT) before the project can be forwarded to FEMA for consideration. Grants are based on a yearly allocation from FEMA.

- Section 406 Mitigation: 406 Mitigation funds supplement FEMA's PA program PW. Mitigation measures must be cost effective and funds must be applied directly to mitigating damaged facilities from future damage from a similar event. Funds are provided on a cost-share basis.

Review Standards

The Team will inventory and evaluate the applicant's existing standards for the type of repairs, reconstruction or restorative work for which Federal loan or grant assistance is being requested. The Team may recommend upgrading existing construction standards or adopting new standards. The Team will also encourage local adoption and enforcement of hazard mitigation standards for all projects, including non-Federally assisted projects.

Suggested Models

The Team will make model State or Federal standards available to applicants. Such standards for new construction may be different from those for repairs or alterations to existing facilities or structures.

5.9.3 Roles and Responsibilities

5.9.3.1 Federal

The Director of the FEMA is responsible for hazard mitigation actions under the Federal/State Agreement. The Regional Director, in coordination with the Governor's authorized representative, shall:

- Provide for a Joint Federal/State/Local Hazard Mitigation Team to survey the affected area and plan for hazard mitigation.
- Appoint a Hazard Mitigation Coordinator to serve on the team.
- Discuss hazard mitigation with local, State and Federal officials.
- Coordinate with the State Hazard Mitigation Coordinator.
- Administer the Section 406 Hazard Mitigation Program.
- Make sure hazard mitigation measures are actually implemented.
- Provide technical advice and assistance.
- Encourage State and local governments to adopt safe zoning and construction standards.

- Ensure that Federal efforts are in addition to local and State efforts.
- Encourage initiative by State and local governments.
- After floods, follow FEMA Floodplain Management Regulations.

5.9.3.2 State

The Governor will appoint a representative of the State OES to be the Governor's authorized representative. This person will be responsible for State hazard mitigation activities under the Federal/State Agreement. The Governor's authorized representative will also work with Federal agencies to ensure State and local participation in hazard mitigation planning. The State Hazard Mitigation Coordinator, along with the Governor's authorized representative, shall:

- Arrange for consultations on the findings and recommendations from the joint survey and shall follow up to ensure that timely and adequate local and State hazard mitigation actions are taken.
- Provide funding or technical assistance to eligible applicants.
- Arrange for State inspection or audit to verify compliance with approved hazard mitigation measures.
- File a final report upon completion of approved hazard mitigation activities in accordance with the Federal/State Agreement, submit a final report of compliance with hazard mitigation requirements by State and local governments through the Governor's authorized representative to the FEMA Regional Director for review and acceptance.
- Accomplish hazard mitigation planning in accordance with the Federal/State Agreement.
- Provide advice and assistance on hazard mitigation measures to applicants, private organizations and individuals.
- Evaluate or have the applicant evaluate the natural hazards in the disaster area and make mitigation recommendations.
- Follow up with applicants to ensure that, as a condition for any grant or loan under the Act, hazard mitigation actions are indeed taken.
- Follow up with applicants to ensure that hazard mitigation plans are submitted (not later than 180 days after the emergency declaration) to the FEMA Regional Director for concurrence.
- Review and update disaster mitigation portions of emergency plans as needed.
- Administer the Section 404 HMGP.

5.9.3.3 Local

The local jurisdiction's authorized representative is responsible for local performance of hazard mitigation measures under the terms of the Federal/State Agreement. The applicant's authorized representative, in coordination with the Governor's authorized representative shall:

- Appoint a Local Hazard Mitigation Coordinator to work with the Federal/State Hazard Mitigation Team.
- With respect to any project application, submit adequate assurance that required hazard mitigation measures have been taken or will be completed.
- To the extent of legal authority, implement and enforce land use regulations and such construction practices which are agreed upon as conditions for FEMA grants or loans. Applicants may request State or Federal advice or assistance in taking these actions.

5.10 Re-Entry

The re-entry phase commences after a disaster has passed and officials deem it safe for residents to return to their impacted communities. Re-Entry will be initiated by the EOC Director, based on clearance from the Incident Commander or the Liaison Officer of the Incident Management Team, in consultation with the Operations Chief at the OA EOC. In the event that the OA EOC has been deactivated, the Incident Commander or the Liaison Officer of the Incident Management Team at the scene will initiate re-entry efforts. The San Diego County Re-Entry Protocol is provided as Appendix G.

5.11 Economic Recovery

Economic recovery is typically conceptualized within the framework of long-term recovery operations associated with major disasters. Special attention to economic recovery generally is not required as a result of local emergencies. While it is important that local, State, and Federal agencies move as quickly as possible to address the economic impacts of major or catastrophic events, economic revitalization efforts must also be based on a sound understanding of the economic landscape before and after the disaster to ensure that recovery is sustainable. Government efforts should strive to enhance regional competitiveness and support long-term development of the regional economy. To this end, it is important that Operational Area jurisdictions and special districts work not only with Federal and State officials, but also with the region's business leaders and the San Diego Regional Chamber of Commerce during all aspects of economic recovery.

The foundation of economic recovery is the restoration of critical public infrastructure and resumption of public services needed to get businesses up and running again and get people back to work. For declared major disasters, FEMA's PA program is integral to economic recovery as the primary infrastructure recovery funding mechanism. If an incident demands large-scale

evacuation or renders a significant portion of the region's housing stock damaged or inhabitable, repopulation is another essential economic recovery element. For declared major disasters, FEMA's IA temporary housing programs will facilitate repopulation efforts to facilitate economic recovery.

The US Dept of Commerce Economic Development Administration (EDA) is the primary federal agency within ESF #14 under the NRP with responsibility for supporting coordinated long-term recovery following natural disasters. EDA's participation in major disaster recovery efforts has traditionally supplemented the lead roles assigned to the FEMA. In addition to its ESF-14 role, EDA may be tasked by FEMA to perform economic impact evaluations or carry out other specific tasks.

5.11.1 San Diego Regional Economic Indicators

The County Land Use and Environment Group (LUEG) and the San Diego Regional Chamber of Commerce collaborate to maintain a database of economic indicators measuring the monthly vitality of the San Diego economy. Indicators are displayed in a Briefing Book format generated by the County's performance management software. Indicators that are tracked include:

- Economic Indexes
- Employment Data
- Housing Indicators
- Mortgage Rates
- Sales Statistics
- Stock Indexes
- Tourism Industry Statistics
- Charity Donation Data

Agencies that could be consulted for economic and demographic indicators include:

- San Diego Association of Governments (www.sandag.org): Provides demographics; jobs, wages and economic impact by traded cluster.
- California Employment Development Dept. (www.edd.ca.gov): Provides jobs and wages by occupation; jobs by industrial sector; number of companies and size of companies by employees by sector; total employment; unemployment rate.
- California Association of Realtors (www.car.org): Provides median home price by county; housing affordability.
- San Diego Association of Realtors (www.sdar.org): Provides median home price and number of homes sold by zip code.
- San Diego Regional Chamber of Commerce (www.sdchamber.org): Provides gross regional product.

- San Diego Business Journal annual Book of Lists (www.sdbj.com): Provides largest companies by sector.
- Centre City Development Corp. (www.ccdc.com): Provides demographics and new construction data on downtown San Diego.

5.12 Resource Demobilization

Recovery involves the final disposition of all resources used during the response and recovery phases of the incident. During recovery, resources are rehabilitated, replenished, disposed of, or retrograded.

Demobilization of certain resources could signal to decision-makers appropriate transitions between response, short-term recovery and long-term recovery phases of the operation. For example, de-activation of the EOC and demobilization of related response resources could signal the transition between response and short-term recovery. Similarly, suspension of curb-side debris removal activities and subsequent demobilization of related resources could signal transition between short-term and long-term recovery.

Resource demobilization should be planned concurrently with the mobilization process and documented as described in Section 5.3.3 of the OA Recovery Plan.

6 AFTER-ACTION REPORTING

SEMS regulations require that any local government or special district proclaiming a local emergency, for which the Governor proclaims a State of Emergency must complete an after-action report. This report must be transmitted to the Southern Region Office of Emergency Services within ninety (90) days of the close of the incident period. The after-action report will provide, at a minimum:

- response actions taken;
- application of SEMS;
- suggested modifications to SEMS;
- necessary modifications to plans & procedures;
- identified training needs; and
- recovery activities to date.

The after-action report will serve as a source for documenting emergency response activities within the Operational Area and identifying areas of concern and successes. It will also be utilized to develop and describe a work plan for implementing improvements.

An after-action report will be a composite document for all SEMS levels, providing a broad perspective of the incident, referencing more detailed documents, and addressing all areas specified in regulations. The after-action reports will be written in simple language, well-structured, brief, well-presented and geared to multiple audiences.

It will include an overview of the incident, including enclosures, and addressing specific areas if necessary and will be coordinated with, but not encompass, hazard mitigation. Hazard mitigation efforts may be included in the "recovery actions to date" portion of the after-action report.

County OES will be responsible for completing and distributing the County's after-action report and will send it to the Southern OES within the required 90-day period. Completion of the after-action report may be coordinated with the Operational Area jurisdictions. Other Operational Area jurisdictions and special districts are responsible for completing and distributing their after-action reports as applicable.

The after-action report's primary audience will be management and employees of Operational Area jurisdictions and special districts. As public documents, they are accessible to anyone who requests a copy. Copies of County of San Diego after-action reports can be obtained from the County OES.

Data for the after-action report will be collected from a questionnaire, RIMS documents, and other documents developed during the disaster response and interviews of emergency responders. The most recent After-Action Report Instructions and Report Form are available on RIMS.

7 PLAN MAINTENANCE, TRAINING AND EXERCISES

7.1 Overview

With each disaster, emergency management professionals worldwide gain experience and knowledge that when shared can improve incident response and recovery. Operational Area emergency managers and staff may receive "lessons learned" from updated State and Federal regulations or guidelines, conferences and seminars, updates to relevant plans and SOPs, as well as training and exercises.

This section addresses the maintenance of the OA Recovery Plan, as well as, training and exercises designed to facilitate efficient and safe response and recovery operations.

7.2 Plan Maintenance

The OA Recovery Plan will be reviewed annually or as necessary following an actual or training event to ensure that plan elements are valid and current. County OES will lead the responsible departments in reviewing and updating their portions of the plan and/or applicable SOP as required based on identified deficiencies experienced in drills, exercises or actual occurrences. The County OES is responsible for making revisions to the OA Recovery Plan that will enhance the conduct of response and recovery operations and will prepare, coordinate, publish and distribute any necessary changes to the plan to all county departments and other entities as shown on the distribution list on the Records Revision Page of this OA Recovery Plan.

7.3 Training and Exercises

The objective of any emergency management organization is efficient and timely disaster recovery. Because recovery operations are rooted in the response phase of any emergency, the OAEP is the first step toward this objective. As a compliment to the OAEP, the OA Recovery Plan is the second step toward this objective. However, planning alone will not accomplish preparedness for response and recovery operations. Training and exercises are essential at all levels of government to make recovery personnel operationally ready.

The best method of training staff for recovery operations is through exercising. Exercises allow personnel to become thoroughly familiar with the procedures, facilities and systems, which will actually be used during recovery.

Exercises can be accomplished in several ways. Tabletop exercises provide a convenient and low cost method of introducing officials to problem situations for discussion and problem solving. Such exercises are a good way to see if adequate emergency policies and procedures exist. Periodic tabletop exercises specific to short- and long-term recovery operations within the Operational Area are recommended.

To the extent feasible and applicable, recovery operations should also be included in functional and full-scale exercises that simulate actual emergencies. While typically designed to exercise procedures and test readiness of response personnel, communications, and facilities, functional exercises should be completed with an eye on recovery. This can be accomplished by reviewing documentation and contracting procedures to facilitate cost recovery and consider demobilization when discussing resource allocation and deployment.

As a critical element to insuring the success of the OA Recovery Plan, training must include both classroom training as well as the "hands on" experience provided by drills and exercises. Recognizing this, the signatories to the OA Recovery Plan agree to participate in scheduled training and exercises. The date and type of exercise will be identified in the annual workplan of USDCESO.

APPENDIX A: DEFINITIONS

General Definitions

The following definitions specifically relate to the State and Federal disaster recovery process:

Contract Work - Any work, equipment or materials provided to the jurisdiction under contractual or rental agreement. This does not include rented equipment operated by jurisdictional employees (these costs are listed on Rented Equipment Summary Records and the labor costs are shown on Force Account Labor Summary Records).

Exhibit "B" - Form completed by the Local Government Emergency Coordinator or their designee, identifying the location of the damage, a description of the damage and the scope of work needed to repair the damage. Primary document used by OES and FEMA to list eligible sites.

Force Account - Any work, equipment or materials provided by jurisdictional employees or stockpiles.

Individual Assistance. (IA) All disaster recovery assistance provided to individuals, renters, and businesses.

Immediate Needs Funding (INF) is a partial advance on Emergency Work (EW) items identified during the Preliminary Damage Assessment (PDA). INF is designed to assist the applicant in dealing with their urgent needs, meaning that it generally covers those items that will require payment by the applicant within the first 60 days after the disaster declaration. The state and FEMA will assess and determine the need to provide INF following a disaster. If INF is provided, the state may also impose separate requirements for INF recipients. INF is not intended for those EW items that involve Special Consideration (SC) or items of work that will require longer than 60 days to complete. These particular items will be funded in the normal manner. Only applicants that were included in the PDA are eligible to receive INF.

Interim Housing Housing for three weeks to three years. Used to provide housing for victims whose homes must be replaced permanently.

Public Assistance (PA) All disaster recovery assistance provided to government agencies.
PDA - Preliminary Damage Assessment. Process where State and Federal inspectors will view damage sites to determine if the jurisdiction has sustained enough damage to require assistance.

Project Worksheet (PW) - formerly known as the Damage Survey Report (DSR).The Project Worksheet is prepared by Local Governments for small projects and the FEMA/OES Project Officers will prepare large PWs. Note: The small/large project threshold is adjusted annually by FEMA based on the Consumer Price Index.

Request for Public Assistance (RPA) formerly known as the Notice of Interest (NOI). Form completed by the Local Government Emergency Coordinator or their designee, identifying the category of damage experience by the jurisdiction and requesting the assistance of the State and Federal government.

Temporary Housing Non-shelter housing for individuals and households lasting between three weeks and six months. Used to provide housing for victims whose homes sustained moderate damage requiring repairs, but not permanent replacement.

Site Definitions

The following examples relate to the definition of the term "site." These examples are provided to ensure the jurisdictional definition of a site meets with the State and Federal interpretation. In general, each individual location should be considered as a separate site.

Debris Removal Site - A site should be for the specific area where the debris was removed. For example, an airport industrial area could constitute a single site, as well as could a specific beach. Parks should be considered a single site unless grouped with the streets surrounding the park.

Emergency Response Site- A site can be department-wide if the costs were incurred on general duties (e.g. traffic control, rescues, etc.). Most fire and law enforcement expenses will be grouped on a department-wide basis.

Streets and other Public Facilities Sites - Each individual street or facility should be considered a separate site. If there is damage to several streets in the same general vicinity (e.g. sidewalk repairs in a four block area), then they can be considered a single site. If the work that is being performed is limited in nature at each site, but constitutes considerable effort on a jurisdiction-wide basis, then these locations can be grouped by pre-existing zone.

Equipment Damage - Whenever a piece of local government equipment is damaged or lost due to a declared emergency, this constitutes an individual site. For example, three vehicles with engine damage due to flooding would be considered three separate sites.

APPENDIX B: DAMAGE ASSESSMENT CATEGORIES

Category A - Debris Removal

This category includes all expenditures associated with the removal of mud and other debris from public property. This can include the removal of private/personal property that has been moved to the right of way under the direction of the jurisdiction. If the labor is completed by local government employees (force account), then only overtime hours are eligible for reimbursement. Reimbursement may be available for temporary workers or special division designated to disaster work. All jurisdictional and rental equipment hours (regardless of whether the operator was on regular time or overtime), materials and contract costs are eligible for reimbursement.

Category B - Protective Measures

This category is used for all expenditures associated with emergency response, including, but not limited to, traffic control, public information activities, fire and rescue response, safety assessments, EOC operations, sandbagging and patrolling flood control facilities. Generally, Category B measures are those temporary measures designed to remove or reduce immediate threats to public property (or public property when in the public interest) or protect them from further damage. If the labor is completed by jurisdictional employees (force account), then only overtime hours are eligible for reimbursement. All jurisdictional and rental equipment hours (regardless of whether the operator was on regular time or overtime), materials and contract costs are eligible for reimbursement. Hours spent preparing disaster reimbursement forms are ineligible.

Category C - Roads and Bridges

This category is used for all expenditures associated with street, road, bridge or sidewalk repairs. This includes, but is not limited to, street signs, traffic lights, curbs and gutters, roadways (paved and unpaved), bridges, manhole covers, embankments and other roadway related structures. Both regular and overtime hours and benefit costs of jurisdictional employees involved with Category C work are eligible costs. All jurisdictional and rental equipment hours, materials and contract costs are eligible for reimbursement as well.

Category D - Water Control Facilities

This category is used for all expenditures associated with flood control, drainage or irrigation facilities owned and maintained by the jurisdiction. This includes, but is not limited to, storm drains, dams, debris basins, dikes, levees, flood gates and flood control channels. Regular and overtime hours as well as benefit costs of jurisdictional employees involved with Category D work are eligible costs. All jurisdictional and rental equipment hours, materials and contract costs are eligible for reimbursement as well.

Category E -Public Buildings and Equipment

This category is used for all expenditures associated with public buildings and related equipment owned or maintained by the jurisdiction. This includes, but is not limited to, local government buildings, leased buildings where the jurisdiction is contractually required to maintain them, park and recreation buildings, office equipment, supplies lost in a disaster, library books, vehicles, specialized equipment and radios. This category does not include water and sewer buildings, supplies or equipment (Category F) or park or recreation facilities (Category G). Regular and overtime hours as well as benefit costs of jurisdictional employees involved with Category E work are eligible costs. All jurisdictional and rental equipment hours, materials and contract costs are eligible for reimbursement as well.

Category F -Public Utilities

This category is used for all expenditures associated with water, power and sewage systems. This includes, but is not limited to, water and sewage treatment facilities, distribution systems and supplies (chlorine, etc.).

Regular and overtime hours as well as benefit costs of jurisdictional employees involved with Category F work are eligible costs. All jurisdictional and rental equipment hours, materials and contract costs are eligible for reimbursement as well.

Category G -Parks, Recreation Facilities and Other

This category is used for all expenditures associated with parks, recreation facilities (not buildings) and facilities not included with the other categories. This includes, but is not limited to, parks, playgrounds, docks, swimming pools and picnic tables. This category is also used to document damage for facilities not included in other categories. Regular and overtime hours as well as benefit costs of jurisdictional employees involved with Category G work are eligible costs. All jurisdictional and rental equipment hours, materials and contract costs are eligible for reimbursement as well.

APPENDIX C: ACRONYMS/ABBREVIATIONS

ARC	American Red Cross
ASTREA	Aerial Support to Regional Enforcement Agencies
CALTRANS	California Department of Transportation
CAL-WARN	California Water Agency Response Network
CAO	Chief Administrative Officer
CBO	Community Based Organization
CDAA	California Disaster Assistance Act
CDL	Community Disaster Loan
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board
DEH	Department of Environmental Health
DFA	Direct Federal Assistance
DPLU	Department of Planning and Land Use
DPR	Department of Parks and Recreation
DRC	Disaster Resource Center
DSW	Disaster Service Worker
DUA	Disaster Unemployment Assistance Program
EDA	Economic Development Agency
EMS	Emergency Medical Services
EOC	Emergency Operation Center
EOP	Emergency Operation Plan
ER	FHWA Emergency Relief Program
ESF	Emergency Support Function
ESP	Emergency Storage Project
EWP	NRCS Emergency Watershed Protection Program
FAC	Family Assistance Center
FAS	Federal Aid System
FAST	Federal Agency Support Team
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMA	FEMA Flood Mitigation Assistance Program
FSA	USDA Farm Service Agency
HMGP	FEMA Hazard Mitigation Grant Program
HUD	Department of Housing and Urban Development
IA	Individual Assistance
ICBO	International Conference of Building Officials

ICW	USACE Inspection of Completed Works Program
IDE	Initial Damage Estimate
INF	Immediate Needs Funding
JIC	Joint Information Center
JFO	Joint Field Office
LAC	Local Assistance Center
LRC	Local Response Center
LUEG	Land Use and Environmental Group
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NIMS	National Incident Management System
NRCS	Natural Resources Conservation Service
NRP	National Response Plan
NSEP	National Security Emergency Preparedness
OA	Operational Area
OAC	Operational Area Coordinator
OAEP	Operational Area Emergency Plan
OES	Office of Emergency Services
OSHA	Occupation Safety and Health Administration
PA	Public Assistance
PDA	Preliminary Damage Assessment
PHA	Public Housing Authority
PNP	Private Non-Profit Organization
PO	Purchase Order
PPDR	Private Property Debris Removal
PW	Project Worksheet
RIMS	Response Information Management System
ROE	Right of Entry
RPA	Request for Public Assistance
SAST	State Agency Support Teams
SBA	Small Business Administration
SDG&E	San Diego Gas and Electric
SDIVOAD	San Diego and Imperial Counties Voluntary Organizations Active in Disaster
SEMS	Standardized Emergency Management System
SHMO	State Hazard Mitigation Officer
SHMT	State Hazard Mitigation Team
SOP	Standard Operating Procedure
TSP	Telecommunications Service Priority
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDCESO	Unified San Diego County Emergency Services Organization

APPENDIX D: FORMS

The following forms will be included at a later date:

- Damage/Safety Assessment Form
- Windshield Survey Form
- Initial Damage Estimate Form
- Force Account Labor Summary Record Form
- Force Account Equipment Summary Record Form
- Leased or Rented Equipment Summary Record Form
- Materials Summary Record Form
- Contract Work Summary Record Form
- Donated Resources Summary Record Form
- After-Action Report Forms
- Project Worksheet Forms
- Request for Public Assistance

APPENDIX E RECOVERY PROGRAMS MATRIX

From State of California Emergency Plan. September 2005. Page 77

SUMMARY OF DISASTER ASSISTANCE AVAILABILITY

This table provides a very brief summary of disaster assistance available. Detailed discussions are contained in: "A Local Government Guide to Disaster Assistance" (OES) December, 1995; and in "Disaster Assistance: A Guide to Recovery Programs" FEMA 229(4), November 1995.

Assistance Available with a Local Proclamation	Assistance Available with a State Proclamation	Assistance Available with Presidential Declaration
• American Red Cross	• Board of Registration for Professional Engineers and the Contractor's License Board	• Cora C. Brown Fund (Individual Assistance)
• Mennonite Disaster Service	• Department of Aging	• Crisis Counseling Program
• Natural Disaster Assistance Act (NDAA) (with OES Director Concurrence)	• Natural Disaster Assistance Act (NDAA) (with OES Director Concurrence)	• Disaster Unemployment
• Assistance with Utilities	• Department of Motor Vehicles	• Temporary Housing Program
• Local Government Tax Relief	• Department of Social Services	• Individual and Family Grant Program
• Salvation Army	• Franchise Tax Board	• Internal Revenue Service Tax Relief
• US Small Business Administration Disaster Loans	• US Small Business Administration Disaster Loans	• Legal Aid
• US Department of Agriculture	• State Board of Equalization	• Public Assistance
• Other Community and Volunteer Organizations	• Department of Insurance	• Hazard Mitigation
	• US Department of Agriculture	• Veterans Affairs Assistance (Housing/Medical)
	• Department of Veterans Affairs CALVET	• Federal Financial Institutions
	• Prior Assistance Available with Local Declarations	• Employment Development Assistance
		• Prior Assistance with Local/State Declarations

From State of California Disaster Recovery and Mitigation Handbook. June 2003. Pages 9-12

The following matrices are designed to provide local emergency managers a quick reference to disaster assistance programs administered or coordinated by DAD. The types of assistance available have been grouped by potential recipients and provided in three separate matrices. The potential recipient groups are as follows:

- ✓ Local government, including:
  - public agencies
  - school districts
  - special districts
  - certain PNPs
- ✓ Small businesses and agricultural communities
- ✓ Individuals and households.

Each matrix is organized by the type of available assistance. The matrices indicate when a local proclamation, state proclamation or federal declaration is needed to access specific program assistance. Also included are application deadlines for requested assistance. The following is a list of the acronyms used within the matrices:

Local Government

Types of Assistance	Program	Declaration, Concurrence, Proclamation, Designation Required	Deadline to Request Assistance (Days from Occurrence)
GRANTS ADMINISTERED BY STATE OES			
Emergency Response Costs for Fire Suppression	FMAG	TBD	0[1]
Restoration of Public Infrastructure	State PA	Local Director's Concurrence	10
	State PA	Local State	10
- includes certain PNP facilities	Federal PA (includes mitigation associated with damaged facilities)	Local State and Presidential	10
Costs for Emergency Response and Protective Measures	State PA	Local State	10
- includes certain PNP facilities	Federal PA	Local State and Presidential	10
Public projects to mitigate damage	HMGP	Local State and Presidential	10
OTHER FEDERAL GRANT PROGRAMS [2]			
Watershed restoration	NRCS	Local State and Presidential	TBD
Engineering projects (levees, bridges, dams, etc.)	USACE	Local State and Presidential	TBD
Federal roads and highways	FHWA	Local State and Presidential	TBD
Community Development Block Grants	HUD	Local State and Presidential	TBD
SPECIAL SERVICES			
Building and infrastructure safety evaluations	SAP	Local State	TBD

[1]Assistance must be requested while the fire is burning out of control.

[2]These federal grant programs may be activated at the direction of the authorizing agency or immediately following a Presidential Declaration. When these other federal grant programs are activated, eligible applicants may also qualify for a state cost share.

Small Businesses and Agricultural Communities

Types of Assistance	Program	Declaration, Concurrence, Proclamation, Designation Required	Deadline to Request Assistance (Days from Occurrence)
GRANTS			
Physical business losses (certain PNPs may be eligible for this assistance)	Physical	SBA Declaration[1]	60
Working capital for economic losses	Economic	SBA Declaration[2]	120
Crop production losses	FSA	USDA Designation	90
Quarantined agricultural losses	APHIS	USDA Designation	n/a[3]

[1] No local or state proclamations are required to receive assistance through the SBA physical loan program. This program may be implemented upon an SBA disaster declaration or a Presidential declaration.

[2] No local or state proclamations are required to receive assistance through the SBA economic injury loan program. This program may also be implemented upon a SBA disaster declaration or an agricultural disaster designation by the Secretary of the USDA.

[3]The APHIS program is usually implemented upon quarantine. In this case, local government is not required to specifically request the assistance.

Individuals and Households

Types of Assistance	Program	Declaration, Concurrence, Proclamation, Designation Required	Deadline to Request Assistance (Days from Occurrence)
GRANTS			
Temporary housing expenses	IHP and SSGP	Local State and Presidential	10
Permanent housing construction	IHP and SSGP	Local State and Presidential	10
Home repair / replacement costs	IHP and SSGP	Local State and Presidential	10
Personal property	IHP and SSGP	Local State and Presidential	10
Medical / dental and funeral expenses	IHP and SSGP	Local State and Presidential	10
Transportation and other expenses	IHP and SSGP	Local State and Presidential	10
LOANS[1]			
Personal property	Physical	SBA	40
Mitigation measures	Physical	SBA	40
Real estate	Physical	SBA	40
SPECIAL SERVICES			
Short-term crisis counseling	ISP	Local State and Presidential	14
Long-term crisis counseling (9 months)	ATRP	Local State and Presidential	40
Extended unemployment benefits	DUA	Local State and Presidential	30

[1]No local or state proclamations are required to receive assistance through the SBA physical loan program. This program is automatically implemented upon a Presidential declaration. This program may also be requested via a letter to State OES with supporting documentation within the deadline above

APPENDIX F: FEMA PUBLIC ASSISTANCE

1. Overview

The Public Assistance (PA) program is authorized by the Stafford Act and implemented by the Federal Emergency Management Agency (FEMA). The program provides grants to assist State and local governments and certain private non-profit (PNP) entities with response to and recovery from disasters. Specifically, the program provides assistance for debris removal, implementation of emergency protective measures, and permanent restoration of infrastructure. The program also encourages protection from future damage by providing assistance for hazard mitigation measures during the recovery process. Funds are provided on a cost share basis with the Federal share greater than or equal to 75 percent of eligible costs.

2. Roles and Responsibilities

The FEMA PA Program is based on a partnership between FEMA, State, and local officials. FEMA is responsible for managing the program and Applicants. The State educates potential Applicants, works with FEMA to manage the program, and is responsible for the Program. Local officials are responsible for identifying damage, providing information necessary for FEMA to approve grants, and managing the projects funded under the PA Program.

2.1 Federal

FEMA PA program staff that interface with State and local Applicants include:

- Federal Coordinating Officer (FCO): The FCO manages and coordinates Federal resource support activities related to Stafford Act disasters and emergencies, including the FEMA PA program. The FCO assists the Unified Command and/or the Area Command and works in partnership with the State Coordinating Officer (SCO) to determine and satisfy State and local assistance requirements.

- Public Assistance Officer (PAO): The program is managed at the Joint Field Office (JFO) by the PAO who advises the Federal Coordinating Officer (FCO) on all PA program matters and manages PA program staff. The PAO also ensures that the program operates in compliance with all laws, regulations, and policies. Depending on the size and severity of the disaster, the PAO may have designated Deputies.
- Public Assistance Coordinator (PAC): At the beginning of the disaster recovery process, a PAC is assigned to each Applicant. The PAC is a customer service manager who works with the Applicant to resolve disaster-related needs and ensure that the Applicant's

projects are processed as efficiently and expeditiously as possible. A PAC generally has responsibility for more than one Applicant.

- Project Officer (PO): POs are primarily responsible for developing Project Worksheets (PWs). The PO will meet with Applicant staff, visit damaged facilities, gather documentation, assess damages, develop a scope of work and associated cost estimate, and explore potential hazard mitigation opportunities in coordination with local officials and the State PA Liaison.
- Specialists: FEMA specialists have defined areas of expertise and aid POs with damage assessments, scopes of work, cost estimates. Specialists also aid the PAO by ensuring compliance with all applicable historical and environmental regulations.

2.2 State

State of California Office of Emergency Service (OES) PA program staff that interface with FEMA PA program staff and local government officials include:

- State Coordinating Officer: The SCO interfaces with the FCO in the coordination of response and recovery operations and programs, including implementation of the FEMA PA program.
- State PAO: The State PAO is the person responsible for administering the PA program for the State and for informing the SCO on all PA program matters.
- Liaison: The State's customer service representative assigned to work with Applicants and the PAC. The Liaison is responsible for providing specific information on State regulations, documentation and reporting requirements to Applicants. The Liaison is also there to provide technical assistance, when requested, and can help identify Hazard Mitigation opportunities.

2.3 Applicant

Applicants within the San Diego Operational Area include local governments, special districts, Federally recognized Native American tribes or authorized tribal organizations, and certain PNP organizations or institutions. FEMA and the State will interface primarily with the Applicant's Recovery Coordinator/Manager and key departmental points of contact with knowledge of needed emergency services-related expenditures and permanent repairs.

3. Process

3.1 Preliminary Damage Assessment

The first step in the FEMA PA process is the Preliminary Damage Assessment (PDA), through which the magnitude and impact of the damage in a county is determined. A FEMA/State team will usually visit the local Applicants to assess the scope of damage and broadly estimate repair costs. Each Applicant should mention known historical or environmental issues and discuss insurance coverage of facilities. Applicants should also explain what immediate expenditures might be associated with any identified emergency work.

3.2 Declarations

After the PDA teams have documented the damage, the Governor will determine whether to request Federal disaster assistance. Two types of Presidential declarations provided for in the Stafford Act may be requested by the Governor: Emergency Declarations and Major Disaster Declarations.

An Emergency Declaration can be declared for any occasion or instance when the President determines Federal assistance is needed. Emergency Declarations usually supplement State and local efforts in providing emergency services, namely the protection of lives, property, and public health and safety.

The President can declare a Major Disaster Declaration for any incident that the President believes has caused damage of such severity that it is beyond the combined capabilities of State and local governments to respond. A Major Disaster Declaration provides a wide range of Federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

3.3 Immediate Needs Funding

During the PDA, immediate needs are noted for each area surveyed. If a disaster is declared and the State thinks the damage costs warrant the need for immediate cash flow, the State may request Immediate Needs Funding (INF) on behalf of an Applicant. INF may total up to 50 percent of PDA estimates for eligible emergency work. If an Applicant receives INF, the INF amount is later deducted from grants issued to the Applicant for eligible emergency work. The State is responsible for disbursing INF to Applicants.

3.4 Applicant's Briefing

An Applicant's Briefing is a meeting conducted by a representative of the State for all potential Applicants for PA grants. The briefing occurs after an emergency or major disaster has been declared and addresses application procedures, administrative requirements, funding, and program eligibility criteria.

The State representative (usually from State OES) is responsible for notifying each potential Applicant of the date, time, and location of the briefing. FEMA personnel may participate. To obtain the maximum benefit from the information presented at the briefing, in addition to a representative from the Applicant's OES (if applicable), FEMA recommends that each prospective Applicant send three representatives: 1) an elected official; 2) a representative from the public works department; and 3) a representative from the accounting office.

3.5 Request for Public Assistance

The Request for Public Assistance (RPA) is the form Applicants use to provide information about their organizations, such as physical location and points of contact (see Appendix E, Forms). FEMA and the State use the information submitted on the RPA to determine if an Applicant is eligible for PA. The form must be submitted to the State PAO within 30 days of the date of the Presidential declaration. It can be submitted at the Applicant's Briefing, by mail, fax, or electronically.

3.6 Kickoff Meeting

Once the RPA is reviewed and the Applicant is deemed to be eligible for public assistance, the PAC will contact the Applicant to set up a Kickoff Meeting to discuss damages, needs assessment, and an action plan for completion of a PW. The PAC will go over what is expected of each Applicant and will provide detailed instructions on what to do and how to do it. The Liaison will provide State specific details on PA program documentation and reporting requirements.

Along with a list of damaged facilities or sites and documentation of emergency-related expenditures to date, Applicants should be prepared to discuss known historical or environmental issues within the general area and specific to any damaged facility. Copies of insurance documentation associated with any damaged facility should also be provided to FEMA during this meeting.

The Applicant's Recovery Coordinator/Manager should attend the Kickoff Meeting along with key departmental points of contact with knowledge of needed emergency services-related expenditures and permanent repairs.

3.7 Project Formulation

Project formulation is the process of documenting the eligible facility, work, and cost for fixing the identified damages. The Applicant is responsible for identifying all damages and managing its projects.

Project formulation allows the consolidation of multiple projects into single PWs to expedite approval and funding, and to facilitate project management. More than one damaged site may be included in a single PW; however, sites with special considerations (discussed in detail in Section 3.8.4 below) should be formulated as a single PW to avoid unnecessary funding delays. The PAC will explain advantages and disadvantages of different ways of formulating projects.

Project formulation begins at the Kickoff Meeting but may continue after this initial meeting as additional damages are identified. Applicants have 60 days following the Kickoff Meeting to identify damages and submit project information.

3.8 Project Worksheet Completion

Following the Kickoff Meeting and project formulation, the PAC will assign a PO to write most PWs for eligible costs associated with emergency work and facility repair. Applicants may write their own PWs for small projects as described in section 3.9.1 below. Primary PW components include the Damage Description and Dimensions, Scope of Work, Project Cost, and Special Considerations (see Appendix D, Forms). These areas are described in detail below.

3.8.1 Damage Description and Dimensions

The purpose of the Damage Description and Dimensions section of the PW is to document disaster-related damages that cannot be otherwise verified after repairs to the facility are initiated. This information establishes the basic eligibility of the project and defines the expectations for the scope of work and associated costs to follow.

The PO describes the disaster-related damage to the facility, including the cause of the damage and the area of the components affected. Dimensions and quantities of damaged elements are provided. This section of PW is also used to document the pre-disaster condition of the facility and to demonstrate that the Applicant is responsible for performing the work.

3.8.2 Scope of Work

The Scope of Work section is the most important part of the PW because it establishes the basis for eligible reimbursement. Work performed outside of the Scope of Work will not be reimbursed.

The PO will list work that has been completed and work to be completed that is necessary to repair disaster-related damages. In this section, work necessary to remove and dispose of disaster-related debris, conduct emergency response measures, or repair or replace the disaster-damaged facility to pre-disaster condition is listed. Special considerations that may affect the Scope of Work are described and ineligible work are documented as well. The basis for the Project Cost estimate is also provided in the Scope of Work section.

3.8.3 Project Cost

FEMA PA grant amounts are based on actual costs if the work has been completed at the time an Applicant requests disaster assistance. However, for work that has not been completed at the time of the request, a cost estimate must be used. Typically, these estimates are prepared using unit costs. With this method, the project is broken down into elements based on the quantities of material that must be used to complete the work. For example, a culvert repair may be broken down into linear feet of pipe, cubic yards of fill, and square feet of pavement. The estimate of these items is a cost per unit that includes all labor, equipment, and material necessary to repair that item.

Project Cost estimates may be derived from any of the following methods, generally ranked in order of accuracy:

1. Actual Costs on Work Completed: Reasonable actual costs for properly procured eligible work and are considered the best source for the PW cost estimate.
2. Contract Costs: Estimated costs from a properly procured contract for completion of eligible work are also a good source for the PW cost estimate.
3. Contractor Bids: Bids received in response to a request for proposal to complete eligible work are acceptable documentation for PW cost estimates.
4. Local Vendor Quotes: Soliciting local vendors for quotes is another method for developing a PW cost estimate.
5. RS Means: RS Means unit price guides are widely used by FEMA and the construction industry to estimate costs for a most building components.
6. FEMA Cost Codes: FEMA maintains a national unit price listing for a number of common disaster-related work items. FEMA cost codes may be used to develop PW

cost estimates when costs derived from contracts, bids, quotes, or RS Means are not available.

FEMA has developed a Cost Estimating Format (CEF) tool that can be used to develop a more uniform method of estimating costs for certain large permanent work projects. The CEF is designed to account for costs incurred across the entire spectrum of eligible work (from design to project completion) and is intended for use on projects that are less than 50 percent complete or will take four or more months to reach 90 percent completion.

3.8.4 Special Considerations

Special considerations are issues other than program eligibility that could affect the scope of work and funding for a project. These issues include floodplain management, insurance, hazard mitigation measures, and compliance with other Federal laws and regulations, such as those pertaining to protection of the environmental and historic preservation.

To expedite the approval of grant funds, FEMA strives to identify and resolve special considerations issues as early as possible. Applicants have a critical role in identifying and quickly resolving special considerations issues before the PW is completed. If these issues are not identified and resolved prior to completion of the PW, processing of the PW may be delayed.

3.9 Payment of Claims

FEMA and the State share responsibility for making PA program funds available to the Applicant. The process is referred to as Payment of Claims.

FEMA is responsible for approving project applications. Once approved, FEMA makes the Federal share of the approved amount available to the State through a process known as obligation. Funds that FEMA has obligated are available to the State via electronic transfer, but reside in a Federal account until the State is ready to award grants to the appropriate Applicants. The State administers the grant to the Applicant and is responsible for securing the State share of the grant amount and for notifying the Applicant that funds are available.

Two different payment methods have been established for PA program grants. The difference between the methods is dependent on whether a project is “small” or “large.” That determination is based on a cost threshold that changes annually. The threshold is updated at the beginning of each fiscal year. For the year ending September 30, 2006, the threshold was set at $57,500.

3.9.1 Small Project PWs

Small project PWs are funded using an initial estimate of costs. The steps for processing a small project PW are described below:

1. An estimate is prepared by FEMA or by the Applicant. FEMA approves funding using the estimate and obligates the Federal share of the funds to the State.
2. The State provides funds to the Applicant as soon as possible after FEMA obligates the funds.
3. The funding level for small projects is generally fixed, regardless of the final cost incurred by the Applicant. FEMA does not perform a final inspection of completed small projects; however, the State must certify that the Applicant completed the work in compliance with all applicable laws, regulations, and policies and therefore may review some or all of an Applicant's small projects.

When an Applicant prepares and submits small project PWs for approval, FEMA conducts a validation process to ensure compliance with all applicable laws, regulations, and policies. During validation, a specialist from FEMA or the State reviews a portion of the Applicant's small projects to confirm that the Applicant has developed accurate scopes of work and cost estimates and that the Applicant has sufficient documentation to support the project eligibility and cost. Normally, the review is limited to 20 percent of the submitted small project PWs; however, if problems are encountered, the sample may be expanded.

Although small project PW funding is based on the estimate of eligible work, an Applicant can request supplemental funding for a net cost overrun on all small projects by submitting an appeal through the State to FEMA. An appeal should be submitted only when the total costs for all small project PWs (i.e., the sum of overruns and underruns of each small project PW) prepared by an Applicant exceed the total cost approved for all small projects. An Applicant may file an appeal for a small project PW cost overrun within 60 days of completion of that Applicant's final small project.

3.9.2 Large Project PWs

Large project PWs are funded using the final accounting of actual costs. The steps for processing a large project PW are described below:

1. A PW is prepared by the PO. FEMA approves funding using the estimate and obligates the Federal share of funds to the State.

2. As the project proceeds toward completion, the Applicant periodically requests funds from the State to meet expenses that have been incurred or that are expected in the near future.
3. When the project is complete, the State determines the final cost of accomplishing the eligible work, often performing inspections or audits in the process. The State then submits a report on the completed project to FEMA, certifying that the Applicant's costs were incurred in the completion of eligible work.
4. After reviewing the State's report, FEMA will consider adjusting the amount of the grant to reflect the actual cost of the eligible work.

When reviewing final costs, the State cannot provide funds for costs that are outside the PW Scope of Work approved by FEMA. The Applicant should contact the State if changes to the PW Scope of Work approved by FEMA are foreseen or identified during performance of the work.

3.9.3 Administrative Allowance

The Stafford Act stipulates that each grant recipient be provided an administrative allowance to cover costs associated with administering the grant. The administrative allowance is calculated based on a sliding scale ranging from 0.5 percent to three (3) percent of total eligible costs approved for the Applicant in a given disaster. Examples of activities that the allowance is intended to cover include:

- Identifying damage
- Attending meetings with FEMA and State Liaisons (Applicant's Briefing, Kickoff Meeting, etc)
- Completing forms necessary to request assistance
- Establishing files and providing copies of documentation
- Assessing damage, collecting cost data and developing cost estimates
- Working with the State during project monitoring and final inspection
- Preparing for audits

The administrative allowance is not intended to cover direct costs of managing specific construction projects that are completed using PA funds. These costs are eligible as part of the grant for each project as long as they can be specifically identified and justified as necessary for the work.

3.10 Appeals

The appeals process is the opportunity for Applicants to request reconsideration of decisions regarding the provision of assistance. The Applicant must file an appeal with the State within 60 days of receipt of notice of the action or decision being appealed. The State will review the appeal and submit it to FEMA for consideration.

There are two levels of appeal. The first level appeal is to the FEMA Regional Director. The second level appeal is to the Assistant Director at FEMA Headquarters.

3.11 Grant Closure

Grant closure occurs when FEMA determines that all applicable administrative actions related to the PA program for an Applicant are complete and all program funds have been reconciled. At this stage, all PA program projects have been completed, the State has awarded all grant funds and submitted its final expenditure report to FEMA, and FEMA has adjusted the funding level for the program as appropriate. Once grant closure occurs, no additional actions related to the program may occur.

3.12 Audits

PA program grant recipients are required to comply with the provisions set forth under the Single Audit Act Amendments of 1996. Even though a Single Audit must be performed, grant recipients are also subject to additional audits by the FEMA Office of Inspector General (OIG) and State auditors for items not covered by the single audit. Specific documentation and procedures are based on the requirements of the Federal Office of Management and Budget (OMB). The OMB requires grant recipients to maintain financial and program records for three years following State submittal of an Applicant's final expenditure report. FEMA may conduct an audit of the program during or after grant closure.

All recovery and procurement personnel should be familiar with the OIG document, Audit Tips for Managing Disaster-Related Projects.

4. Eligibility

The PA program is based on statutes, regulations and policies. The statute, the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) is the underlying document that authorizes the project. Regulations published in Title 44 of the Code of Federal Regulations (CFR) Part 206 implement and interpret the statute. Policies are written to apply the statute and regulations to specific situations. These documents govern the eligibility criteria

through which FEMA administers the PA program. There are four components to disaster assistance eligibility: Applicant, Facility, Work, and Cost.

4.1 Applicant

Four types of entities are eligible Applicants under the FEMA PA program:

- State government agencies;
- Local governments and special districts;
- PNP organizations or institutions that own or operate facilities that are open to the general public and that provide certain services otherwise performed by a government agency; and
- Federally recognized Indian Tribes or authorized tribal organizations and Alaskan Native village organizations.

4.2 Facility

With certain exceptions, an eligible facility is a building, works, system, or equipment that is built or manufactured, or an improved and maintained natural feature that is owned by an eligible Applicant. Land used for agricultural purposes is not considered a facility within the FEMA PA program. To be eligible for funding the facility must:

- Be the responsibility of an eligible Applicant;
- Be located in a designated disaster area;
- Not be under the specific authority of another Federal agency for disaster assistance; and
- Be in active use at the time of the disaster.

If a facility is being used for purposes other than which it was originally designed, the eligible restoration is limited to the extent necessary to restore its immediate pre-disaster use. All eligible PNP facilities must be open to the general public.

4.3 Work

In general, eligible work is based on the following minimum criteria:

- It must be required as a direct result of the declared event;
- It must be within the designated disaster area; and
- It must be the legal responsibility of an eligible Applicant at the time of the disaster.

Eligible work is classified as either emergency or permanent work and is divided into categories by FEMA. Debris removal and emergency protective measures are considered emergency work, Categories A and B respectively. Permanent work is grouped by type of facility, Categories C through G. More specific descriptions of eligible categories of work are located in Appendix B, Damage Assessment Categories of Work.

If an eligible facility is damaged to the point where the Applicant thinks the facility should be replaced rather than repaired, FEMA applies a "50% Rule" to determine the eligibility of replacement as opposed to repair work.

The 50% Rule is summarized as follows:

- If the Repair Cost divided by the Replacement Cost is less than 50 percent, then only the repair cost is eligible.
- If the Repair Cost divided by the Replacement Cost is greater than 50 percent, then the replacement cost is eligible

Repair Cost equals the cost of repair of damaged components only. The cost does not include eligible codes and standards upgrades, demolition, site work, or applicable project management costs.

Replacement cost equals the cost of reconstructing the facility and includes current codes and standards upgrades. The cost does not include demolition, site work, or applicable project management costs.

4.4 Cost

Not all costs incurred by an eligible Applicant are eligible for reimbursement through the FEMA PA program. Eligible costs are costs that:

- Are reasonable and necessary to accomplish eligible work;
- Comply with Federal, State, and local procurement requirements; and
- Do not include (or are reduced by) insurance proceeds, salvage values, and other credits.

The eligible cost criteria apply to all direct costs, including salaries, wages, and fringe benefits, materials, equipment, and contracts awarded for eligible work. In addition to these direct costs, an Applicant will receive an administrative allowance as discussed in sub-section 3.9.3 above.

PA program funds are provided on a cost share basis. Because funding provided by the program is supplementary in nature, an appropriate sharing of costs between the Federal and State

governments must be determined. While the cost share is subject to change depending on the severity of a disaster, the minimum Federal cost share is 75 percent of eligible costs. The State and eligible Applicants determine the distribution of the non-Federal share.

5. Hazard Mitigation

Recovery is part of a continuum that includes preparedness, response, recovery, and hazard mitigation. Hazard mitigation funded through the PA program is a form of preparedness that occurs after an event and aims to prevent or minimize damage from a future event.

Hazard mitigation restores a facility beyond its pre-disaster condition and is subject to FEMA environmental and historical review. Two forms of hazard mitigation are funded through the FEMA PA Program and are described below.

5.1 Section 406 Mitigation

Section 406 Hazard Mitigation is a funding source for cost-effective measures that would reduce or eliminate the threat of future damage to a facility damaged during the disaster. The measures must apply only to the damaged elements of a facility rather than to other, undamaged parts of the facility or to the entire system. For example, if a flood damaged three culverts in a system of five culverts and increasing the capacity of the culverts would mitigate the damage, only the capacity of the damaged culverts could be increased through Section 406 Hazard Mitigation. An Applicant may not apply Section 406 Hazard Mitigation funding to alternate or improved projects if a new replacement facility is involved. When replacement facilities are involved, hazard mitigation should be accomplished through compliance with current codes and standards.

5.2 Codes and Standards Upgrades

Various hazards can also be mitigated through compliance with current codes and standards. When a facility must be repaired or replaced, FEMA may pay for upgrades that are necessary to comply with codes and standards. This situation typically occurs when older facilities, particularly buildings, must be repaired in accordance with codes that were adopted after the original construction. For the cost of an upgrade to be eligible, the code or standard requiring the upgrade must meet each the following five criteria:

- Apply to the repair work being performed.
- Be appropriate to the pre-disaster use of the facility.
- Be reasonable, formally adopted, in writing, and implemented prior to the disaster.
- Apply uniformly to all facilities of the type being repaired within the Applicant's jurisdiction.
- Be enforced during the time that it was in effect.

6. Improved and Alternate Projects

Following major or catastrophic disasters that cause substantial damage to public infrastructure, it may be desirable to expand certain facilities or change a facility's function rather than restore it to pre-disaster condition. The FEMA PA program allows for this flexibility through approval of improved or alternate projects.

6.1 Improved Projects

Applicants performing restoration work on a damaged facility may use the opportunity to make additional improvements while still restoring the facility to its pre-disaster design. For example, an Applicant might propose laying asphalt on a gravel road or replacing a firehouse that originally had two bays with one that has three bays. Projects that incorporate such improvements are called "improved projects."

An improved project may be requested for both small and large projects, but must be approved by the State prior to construction. Any project that results in a significant change from the pre-disaster configuration (i.e., different location, footprint, function, or size) must be reviewed by FEMA prior to construction to ensure completion of the appropriate environmental and/or historical review. State approval must be held pending such review.

Federal funding for improved projects is limited to the Federal share of the PW estimated cost and the time limits that would be associated with repairing the damaged facility to pre-disaster condition.

6.2 Alternate Projects

Occasionally an Applicant may determine that the public welfare would not be best served by restoring a damaged facility or its function to pre-disaster condition. This usually occurs when the service provided by the facility is no longer needed, although the facility was still in use at the time of the disaster. Under these circumstances, the Applicant may apply to FEMA to use a portion of the eligible funds for alternate projects. All requests for alternate projects must be made within 12 months of the Kickoff Meeting and approved by FEMA prior to construction.

Alternate projects are eligible for 75 percent of the approved Federal share of the estimated eligible costs associated with repairing the damaged facility to its pre-disaster design, or actual costs of completing the alternate project, whichever is less.

Possible alternate projects include repair or expansion of other public facilities, construction of new public facilities, purchase of capital equipment, or funding of hazard mitigation measures in the area affected by the disaster. Funding may not be used for operating costs or to meet State or Applicant cost share requirements on other FEMA PA projects or projects that use other Federal grants.

7. Timeframes

FEMA has established timeframes for requesting assistance and for completing work using PA grants.

7.1 Requesting Assistance

The following timeframes apply to requests for assistance:

- An Applicant must submit the RPA within 30 days of the date of the declared disaster.
- Project information must be submitted to FEMA within 60 days of the Kickoff Meeting.
- FEMA will take action on granting funds for a specific project within 45 days of receiving all of the information for that project.
- An Applicant may appeal FEMA's decision to the State within 60 days of being notified of any decision.
- An Applicant may file an appeal for a small project PW cost overrun within 60 days of completion of that Applicant's final small project.
- An Applicant may request an alternate project within 12 months of the Kickoff Meeting.

7.2 Completing Work

The following timeframes apply to the completion of work:

- An Applicant must complete debris removal and emergency work operations within 6 months following the Presidential declaration.
- An Applicant must complete permanent work within 18 months following the disaster designation.

7.3 Time Extension

All timeframes are set by regulation; however, if extenuating circumstances or unusual project conditions exist, a time extension may be requested through the State. The State has the authority to extend the timeframes for completion of debris removal and emergency work by six (6) months and permanent work by 30 months. For all other extensions, the State must request the extension from FEMA.

APPENDIX G: COUNTY OF SAN DIEGO RE-ENTRY PROTOCOL

COUNTY OF SAN DIEGO

Re-Entry Protocol

Developed by the San Diego County
Office of Emergency Services

September 2004

The following agencies have assisted in the development of this document and have agreed to the responsibilities set forth in this Protocol.

San Diego County Sheriff's Department
San Diego County Air Pollution Control District
San Diego County Dept. of Planning and Land Use
San Diego County Dept. of Environmental Health
San Diego County Dept. of Public Works
San Diego County Dept. of Mental Health
San Diego County Medical Examiner
San Diego County Office of Public Health
California Department of Transportation
San Diego Police Department
San Diego Fire Department
California Highway Patrol
California Dept. of Forestry
Info Line
American Red Cross
San Diego Gas & Electric
U. S. Forest Service

Purpose

This protocol is written to provide uniform guidance and procedures to ensure a coordinated safe and orderly re-entry into impacted communities. Past disasters have shown the criticality of accurate and timely communication. Communicating information is essential to ensure public health and safety by determining an area is safe to re-enter from both a safety and security standpoint. A coordinated response will alleviate the responsibility of a single agency, and ensure consistent, accurate communication to the public. In addition to listing factors for consideration, this protocol identifies the roles and responsibilities of key agencies that may be involved in re-entry.

Governing Authorities

This protocol is guided by the Federal Code of Regulations, (40 CFR 61.145 (m)), the California Penal Code (402, 409.5, 148.2), the California Vehicle Code (Section 2410), the California Health and Safety Code (Section 25350) and adheres to SEMS guidelines.

Responsibilities:

Agencies

- All agencies will also be guided by their individual emergency response plans in addition to the provisions of this plan.
- Each agency is responsible to ensure that communication of the completion of their assignments in the Re-Entry Protocol is received by the EOC Director or the Incident Commander.

Re-Entry Coordinator (REC)

- The REC will be the EOC Director if the Emergency Operations Center (EOC) is activated. If the EOC is not activated, the Incident Commander or the Liaison Officer of the Incident Management Team will be the REC.
- The REC has the overall management responsibility for the coordination between all agencies with a responsibility for re-entry and ensures that communication is accomplished effectively.
- The REC will inform Media and Public Relations of re-entry status.
- After all activities on the checklist have been completed, the REC will initiate re-entry.

Re-Entry Initiation

The Re-Entry phase commences after a disaster has passed and officials deem it safe for residents to return to their impacted communities.

Re-Entry will be initiated by the EOC Director, based on clearance from the Incident Commander or the Liaison Officer of the Incident Management Team, in consultation with the Operations Chief at the San Diego County Emergency Operations Center. In the event that the Emergency Operations Center has been deactivated, Re-Entry will be initiated by the Incident Commander or the Liaison Officer of the Incident Management Team at the scene.

Priorities for Re-Entry

- Safety
- Security
- Damage Assessment
- Restoration of Services
- Communication of Information
- Inter-Agency

In accordance with the Standardized Emergency Management System (SEMS) guidelines, communication on the status of re-entry will be from the Incident Commander on the scene, to the Departmental Operations Center (DOC), to the Emergency Operations Center.

Public Notification

- The Public will be notified of re-entry status via AM/FM Radio, TV, Press Releases, Internet, and live interviews.
- Incoming phone lines will be staffed to provide both pre-recorded and live information.
- Signs and/or White Boards will be posted at Checkpoints, Shelters

Response

First Responder Personnel includes:

- Fire (Local Fire Departments, CDF, U.S. Forest Service)
- Law Enforcement (Sheriff, Local Police Departments, CHP) and
- Agencies that play key roles in restoring normal operations such as Search and Rescue Teams, Utilities and Infrastructure Repair Personnel, Damage Assessment Teams and the Medical Examiner will have immediate access to the affected area.

Once an area has been deemed safe for re-entry, re-entry will be limited to Residents and Business Operators and Critical Support Groups such as Healthcare and Mental Health Personnel, Contractors and Insurance Adjustors.

Requirements Prior to Re-Entry

- Aerial and Ground Surveys to identify and prioritize the most seriously damaged areas of the county with respect to major routes, neighborhoods, businesses, and public facilities. (Law Enforcement, Fire)
- Establishment of perimeters (Law Enforcement)
- Identification of necessary road closures and detours (Law Enforcement)
- Identification Requirements for Necessary Personnel (Law Enforcement)
- Verification of proper Agency ID
- If Necessary, Issuance of Permits
- The re-entry area is contained and fire-safe (Fire)
- Structures and trees are deemed safe (Fire)
- Search and Rescue completed (Fire)
- No leaking natural gas or energized downed power lines (SDG&E)
- Building Inspections - Structures deemed safe to reenter (DPLU)
- Major routes are intact and passable (Law Enforcement, Cal Trans, DPW)
- Roadblocks and Checkpoints set up (Law Enforcement)
- Signs to identify streets (Landmarks may be missing) (DPW)
- Debris removed from public right-of-way (DPW)
- Safety Assessment Complete (DPLU)
- Detailed Damage Assessment (FEMA, State OES)
- Retrieval of remains and personal effects as appropriate (Medical Examiner/Animal Services)
- There is no threat to public safety (Law Enforcement)
- There is no threat to public health, and /or appropriate warnings are issued (DEH)
- No Hazardous Materials
- Air Quality Safe (APCD)
- Water Quality Safe
- Sanitation Issues addressed
- Communication of hazards to Public via Media and pamphlets available at checkpoints (Public Health and Red Cross)
- Telephone Information Hotlines for the Public have been established (INFO LINE/2-1-1, EOC, Law Enforcement)

Control of Re-Entry

- Re-entry Check Points are staffed (Law Enforcement)
- Credential Verification Area (CVA) set up nearby Re-Entry Points, Evacuation Centers (Shelters), Local Assistance Centers
- Procedures in place for proper identification of returning Residents and Critical Support Personnel and ensuring legitimacy of Contractors and/or Insurance Adjustors (ID Requirements, Forms, Permits)
- Informational material available for residents (Public Health, Red Cross)
- Curfews implemented if necessary (County Board of Supervisors)
- Curfews enforced (Law Enforcement)
- Agency Roles
- County Office of Emergency Services (thru the Emergency Operations Center)
- Responsible for coordination of all agencies
- Coordinate through the EOC with Media and Public Relations
- Communicate with Municipalities and State EOC

Fire

- Ensure Area for Re-Entry is contained and fire-safe
- Assess safety of trees and structures
- Search and Rescue

Law Enforcement

- Ground survey, supplanted by air survey if available.
- Set up roadblocks (prevent mass entry, prevent looting)
- Establish and monitor checkpoints
- Primary role in verification of identification and issuance of permits, if deemed necessary.
- Contractors and Insurance Adjusters – Verification of legitimacy
- Set up and staffing of permit processing locations CVA (Credential Verification Area) close to Checkpoints and/or in Evacuation Centers, Local Assistance Centers
- Provide overall security (against looting, theft, and unauthorized entry)
- Provide escorts, if necessary
- Enforce curfews

Department of Planning and Land Use (DPLU)

- Damage/ Safety Assessment, if activated
- Coordination with FEMA and State OES Damage Assessment Teams
- Dept. of Environmental Health (DEH)
- Ensure no risks to public health
- Oversight of site cleanup and removal of hazardous materials

Air Pollution Control District (APCD)

- Inform public of precautions of air quality
- Ensure Contractor compliance with Asbestos NESHAP (National Emission Standards for Hazardous Air Pollutants) and provide public with guidelines

Medical Examiner

- Removal of remains and personal effects as appropriate
- Security of personal property as appropriate
- Operation of field morgue and/or mass burial site as appropriate

Department of Public Works (DPW)

- Inspection of Roadway Infrastructures
- Provide signage for affected areas
- Debris Removal from public right-of-way
- Ensure major routes are intact and passable
- Assist law enforcement with road closures, re-openings and road detours

California Department of Transportation

- Inspection of state roadway infrastructures
- Debris Removal from freeways and state highways right-of-ways
- Ensure major routes are intact and passable
- Provide signage, if necessary
- Assist law enforcement with road closures, re-openings and road detours

San Diego Gas & Electric

- Ensure no energized downed power lines

- Check for natural gas leaks up to the meter
- Shut off service to residence, if requested by Fire or Law Enforcement
- Provide generator information on the website

Utilities

- Assess Damage
- Secure water and sewer leaks

San Diego County Board of Supervisors

- May institute curfews (Clearance can be given by the County EOC to public safety personnel, utility personnel and relief workers to violate established curfews)

Media and Public Relations

- Notify Public once Re-Entry has been initiated
- Public will be notified via AM Radio, TV, Press releases, Internet, live interviews
- Notify Public of Telephone Information Line, Assistance Centers, Identification Requirements for Re-Entry

American Red Cross/Dept. of Mental Health

- American Red Cross will take the lead in providing Mental Health and Spiritual Care Workers. If the numbers are larger than they can handle, they will coordinate with County Dept. of Mental Health and SDIVOAD (San Diego/Imperial County Voluntary Organizations Active in Disasters)
- American Red Cross and Dept. of Mental Health will coordinate printing relevant information for resident distribution at checkpoints.

Re-Entry Checklist

- ☐ Ground and/or Aerial Survey Complete –Law Enforcement, Fire
- ☐ Fire has determined the area contained and fire-safe - Fire
- ☐ Trees and Structures deemed safe – Fire, DPLU
- ☐ Search and Rescue complete – Fire and Law Enforcement
- ☐ Major Routes are intact and passable – Law Enforcement, Cal Trans, DPW
- ☐ Law Enforcement has examined the scene – Law Enforcement
- ☐ Detours, Roadblocks and Checkpoints established – Law Enforcement
- ☐ Procedures and locations for verification of ID are in place – Law Enforcement
- ☐ There is no hazardous materials threat to Public Health and/or appropriate warnings have been issued - DEH
- ☐ Water is deemed safe and/or appropriate warnings have been issued – DEH
- ☐ Air Quality is safe and/or appropriate warnings have been issued – APCD
- ☐ Remains and appropriate personal effects have been removed – Medical Examiner
- ☐ Personal property of decedents secured – Medical Examiner/Public Administrator
- ☐ Field morgue and/or mass burial site established and secured if required – Medical Examiner
- ☐ Structures deemed safe and/ or appropriately marked – Fire, DPLU
- ☐ Damage/ Safety Assessment completed – Fire, DPLU
- ☐ Major debris has been removed from public right of way- DPW, Cal Trans
- ☐ Appropriate Signage placed for community orientation – DPW, Cal Trans
- ☐ No leaking gas or downed power lines – SDG&E
- ☐ A plan is in place to communicate information to the public – Media and Public Relations Dept., Law Enforcement PIO, Red Cross, INFO LINE/ 2-1-1

APPENDIX H: ESF DESCRIPTIONS

ESF #1 – Transportation

ESF Coordinator: Department of Transportation

Emergency Support Function (ESF) #1 –Transportation supports the Department of Homeland Security (DHS), assisting Federal agencies; State, local, and tribal governmental entities; and voluntary organizations requiring transportation for an actual or potential Incident of National Significance. Through the Department of Transportation (DOT)'s coordination role, ESF #1 integrates the DOT responsibility for Emergency Management of the Transportation System (EMTS) in the prevention/mitigation, preparedness, recovery, infrastructure restoration, safety, and security of the Nation and its transportation system. ESF #1 is designed to provide transportation support to assist in domestic incident management. ESF #1 is designed to provide transportation support to assist in domestic incident management.

ESF #2 - Communications

ESF Coordinator: Department of Homeland Security/Information Analysis and Infrastructure Protection/National Communications System

Emergency Support Function (ESF) #2 – Communications ensures the provision of Federal communications support to Federal, State, local, tribal, and private-sector response efforts during an Incident of National Significance. This ESF supplements the provisions of the National Plan for Telecommunications Support in Non-Wartime Emergencies, hereafter referred to as the National Telecommunications Support Plan (NTSP).

ESF #3 - Public Works and Engineering

ESF Coordinator: Department of Defense/U.S. Army Corps of Engineers

Emergency Support Function (ESF) #3 – Public Works and Engineering assists the Department of Homeland Security (DHS) by coordinating and organizing the capabilities and resources of the Federal Government to facilitate the delivery of services, technical assistance, engineering expertise, construction management, and other support to prevent, prepare for, respond to, and/or recover from an Incident of National Significance.

ESF #4 - Firefighting

ESF Coordinator: Department of Agriculture/Forest Service

Emergency Support Function (ESF) #4 – Firefighting enables the detection and suppression of wildland, rural, and urban fires resulting from, or occurring coincidentally with, an Incident of National Significance. ESF #4 manages and coordinates firefighting activities, including the detection and suppression of fires on Federal lands, and provides personnel, equipment, and supplies in support of State, local, and tribal agencies involved in rural and urban firefighting operations.

ESF #5 - Emergency Management

ESF Coordinator: Department of Homeland Security/Emergency Preparedness and Response/Federal Emergency Management Agency

Emergency Support Function (ESF) #5 – Emergency Management is responsible for supporting overall activities of the Federal Government for domestic incident management. ESF #5 provides the core management and administrative functions in support of National Response Coordination Center (NRCC), Regional Response Coordination Center (RRCC), and Joint Field Office (JFO) operations.

ESF #6 - Mass Care, Housing, and Human Services

ESF Coordinator: Department of Homeland Security/Emergency Preparedness and Response/Federal Emergency Management Agency

Emergency Support Function (ESF) #6 – Mass Care, Housing, and Human Services supports State, regional, local, and tribal government and nongovernmental organization (NGO) efforts to address the non-medical mass care, housing, and human services needs of individuals and/or families impacted by Incidents of National Significance.

ESF #7 - Resource Support

ESF Coordinator: General Services Administration

Emergency Support Function (ESF) #7 – Resource Support assists the Department of Homeland Security (DHS), supporting Federal agencies and State, local, and tribal governments requiring resource support prior to, during, and/or after Incidents of National Significance.

ESF #8 - Public Health and Medical Services

ESF Coordinator: Department of Health and Human Services

Provides coordinated Federal assistance to supplement State and local resources in response to public health and medical care needs following a major disaster or emergency, or during a developing potential medical situation. Assistance provided under ESF #8 is directed by the Department of Health and Human Services (HHS) through its executive agent, the Assistant Secretary for Health (ASH). Resources will be furnished when State and local resources are overwhelmed and public health and/or medical assistance is requested from the Federal Government. Resource support to Federal, State, local, and tribal governments consists of emergency relief supplies, facility space, office equipment, office supplies, telecommunications (in accordance with the Office of Science and Technology Policy (OSTP) National Plan for Telecommunications Support in Non-Wartime Emergencies), contracting services, transportation services (in coordination with ESF #1– Transportation), security services, and personnel required to support immediate response activities.

ESF #9 - Urban Search and Rescue

ESF Coordinator: Department of Homeland Security/Emergency Preparedness and Response/Federal Emergency Management Agency

Emergency Support Function (ESF) #9 – Urban Search and Rescue (US&R) rapidly deploys components of the National US&R Response System to provide specialized life-saving assistance to State, local, and tribal authorities during an Incident of National Significance. US&R activities include locating, extricating, and providing onsite medical treatment to victims trapped in collapsed structures. The National US&R Response System integrates US&R task forces, Joint Management Teams (JMTs), and technical specialists.

ESF #10 - Oil and Hazardous Materials Response

ESF Coordinator: Environmental Protection Agency

Emergency Support Function (ESF) #10 – Oil and Hazardous Materials Response provides Federal support in response to an actual or potential discharge and/or uncontrolled release of oil or hazardous materials during Incidents of National Significance when activated. The Federal Government also may respond to oil and hazardous materials Incidents of National Significance using mechanisms of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) without activating ESF #10. Those procedures are described in the Oil and Hazardous Materials Incident Annex. (Note: For the purposes of this annex, "hazardous materials" is a general term intended to mean hazardous substances, pollutants, and contaminants as defined in the NCP.)

ESF #11 - Agriculture and Natural Resources

ESF Coordinator: Department of Agriculture

Emergency Support Function (ESF) #11 –Agriculture and Natural Resources supports State, local, and tribal authorities and other Federal agency efforts to address: (1) provision of nutrition assistance; (2) control and eradication of an outbreak of a highly contagious or economically devastating animal/zoonotic disease, highly infective exotic plant disease, or economically devastating plant pest infestation; (3) assurance of food safety and food security (under Department of Agriculture (USDA) jurisdictions and authorities), and (4) protection of natural and cultural resources and historic properties (NCH) resources prior to, during, and/or after an Incident of National Significance.

ESF #12 - Energy

ESF Coordinator: Department of Energy

Emergency Support Function (ESF) #12 – Energy is intended to restore damaged energy systems and components during a potential or actual Incident of National Significance. Under Department of Energy (DOE) leadership, ESF #12 is an integral part of the larger DOE responsibility of maintaining continuous and reliable energy supplies for the United States through preventive measures as well as restorative actions.

ESF #13 - Public Safety and Security

ESF Coordinator: Department of Homeland Security/Department of Justice

Emergency Support Function (ESF) #13 – Public Safety and Security integrates Federal public safety and security capabilities and resources to support the full range of incident management activities associated with potential or actual Incidents of National Significance.

ESF # 14 - Long-Term Community Recovery and Mitigations

ESF Coordinator: Department of Homeland Security/Emergency Preparedness and Response/Federal Emergency Management Agency

Long-Term Community Recovery and Mitigation provides a framework for Federal Government support to State, regional, local, and tribal governments, nongovernmental organizations (NGOs), and the private sector designed to enable community recovery from the long-term consequences of an Incident of National Significance. This support consists of available programs and resources of Federal departments and agencies to enable community recovery, especially long-term community recovery, and to reduce or eliminate risk from future incidents, where feasible.

ESF # 15 - External Affairs

ESF Coordinator: Department of Homeland Security

Emergency Support Function (ESF) #15 – External Affairs ensures that sufficient Federal assets are deployed to the field during a potential or actual Incident of National Significance to provide accurate, coordinated, and timely information to affected audiences, including governments, media, the private sector, and the local populace. ESF #15 provides the resource support and mechanisms to implement the National Response Plan – Incident Communications Emergency Policy and Procedures (NRP-ICEPP) described in the NRP Public Affairs Support Annex.

APPENDIX I: DISASTER DEBRIS RECYCLING AND HANDLING PLAN

1. Disaster Debris Recycling and Handling

A significant amount of pre-planning can occur prior to a disaster. However, as in all natural disasters, the actual effects are random, and for that reason cannot be completely projected prior to the event. Assessment of the amount of damage and the amount of debris generated are the first steps in responding to a disaster. Because of its composition, almost all disaster debris is recyclable. A list of disaster debris is included in Table 1.0.

Table 1.0
Disaster Debris Components

Asphalt	Sandbags	Glass
Concrete	Soil and Rock	Metals
Food	Furniture	Wallboard (drywall)
Wood	Yard Waste	Personal Belongings
Mixed Inerts (concrete, asphalt, red clay brick, and dirt)	Vehicles (can be handled through state-funded abandoned vehicle programs)	Plastic (sheeting and containers)

In addition to the above mentioned materials, some hard to handle or hazardous wastes may include, but are not limited too those listed in Table 2.0. Furthermore, human remains will be dealt with as outlined in the Operational Area Emergency Plan, Annex F.

Table 2.0
Hard-to-Handle Disaster Debris Components

Asbestos (chimneys, ceiling tiles, insulation etc.)*	Medical waste	Radiological materials
Ash*	Treated Wood*	Dead Animals
Food Waste	Lead-containing debris	
Household & Business Hazardous Waste (batteries, cleaners, paint, pool chemicals, etc.)	White Goods (large appliances such as refrigerators, washers and dryers)**	Universal Wastes (mercury containing items, T.V.'s, computers)

*May be disposed in lined areas of a Class III landfill if properly contained and meet the acceptance criteria for each landfill.

**Appliances are banned from landfills and must be handled by a certified appliance recycler prior to processing. A list of certified recyclers can be found on the Department of Toxic Substance Control.

2. Debris Removal

2.1 DEBRIS REMOVAL STAGES

Debris removal from disasters occurs in stages. The first stage involves immediate clearing of emergency routes to allow rescue crews entry to hard hit areas. The second stage requires removal of debris from streets to return traffic flow to normal patterns, repair of road and structural damage, and the third stage includes the longer process of private property debris removal. Figure 3.0 outlines the timeline for disaster debris recovery.

Table 3.0
Disaster Debris Recovery Timeline

Pre-Disaster		Create Disaster Debris Plan Develop a disaster debris ordinance Designate responsible departments and staff Locate potential countywide staging sites through the Solid Waste Technical & Citizens Advisory Committees Identify sample contracts and list existing contracts Identify existing facilities Develop Master Deconstructor /Recycler and contractor training
Stage 1 (w/in 72 hours)	Emergency Routes	Emergency roadway debris removal Public right-of-way debris removal and recycling Send out damage assessment teams for public buildings/structures
Stage 2 (3-30 days after)	Public right-of-way and structures	Update 2-1-1 hotline with jurisdictional information for debris handling and removal information. Demolition and repair of private & public property that is health & human hazard Locate temporary staging sites and permit requirements Confirm sites/areas for recycling, transfer and disposal. Work with facilities to get emergency waivers of permit conditions including tons, hours of operation, vehicle counts, etc. Use of volunteers to assist in these efforts as registered disaster service workers.
Stage 3 (30-60 days after)	Private Property	Debris removal starts Dangerous tree removal and demolition of leaning buildings Inland and beach waterway cleanup Private property cleanup (individual property owners will begin shortly after the disaster)
Stage 4 (ongoing through end)	Environmental Mitigation	Remediate staging areas Use of volunteers to assist in these efforts as registered disaster service workers.

2.2 DEBRIS REMOVAL MANAGEMENT

Each city and the County is responsible for providing emergency response services within their jurisdiction and for coordinating disaster debris cleanup. Sharing of resources among local jurisdictions following a disaster will be coordinated through the Standardized Emergency Management System (SEMS) in order to be eligible for state and federal reimbursement. Figure 1.0 identifies the roles and responsibilities required to respond to a disaster.

Coordination between jurisdictions will be facilitated by the Office of Emergency Services (OES) and a solid waste representative from each jurisdiction. Additional coordination may be needed for hazardous waste and facility permitting. Information for debris handling and removal will be coordinated through the countywide 2-1-1 hotline which will refer residents to their appropriate jurisdiction's hotline and website. Unless otherwise noted, each jurisdiction will handle its own debris. Standardized press releases and public information will be coordinated for recycling, household hazardous waste and debris handling.

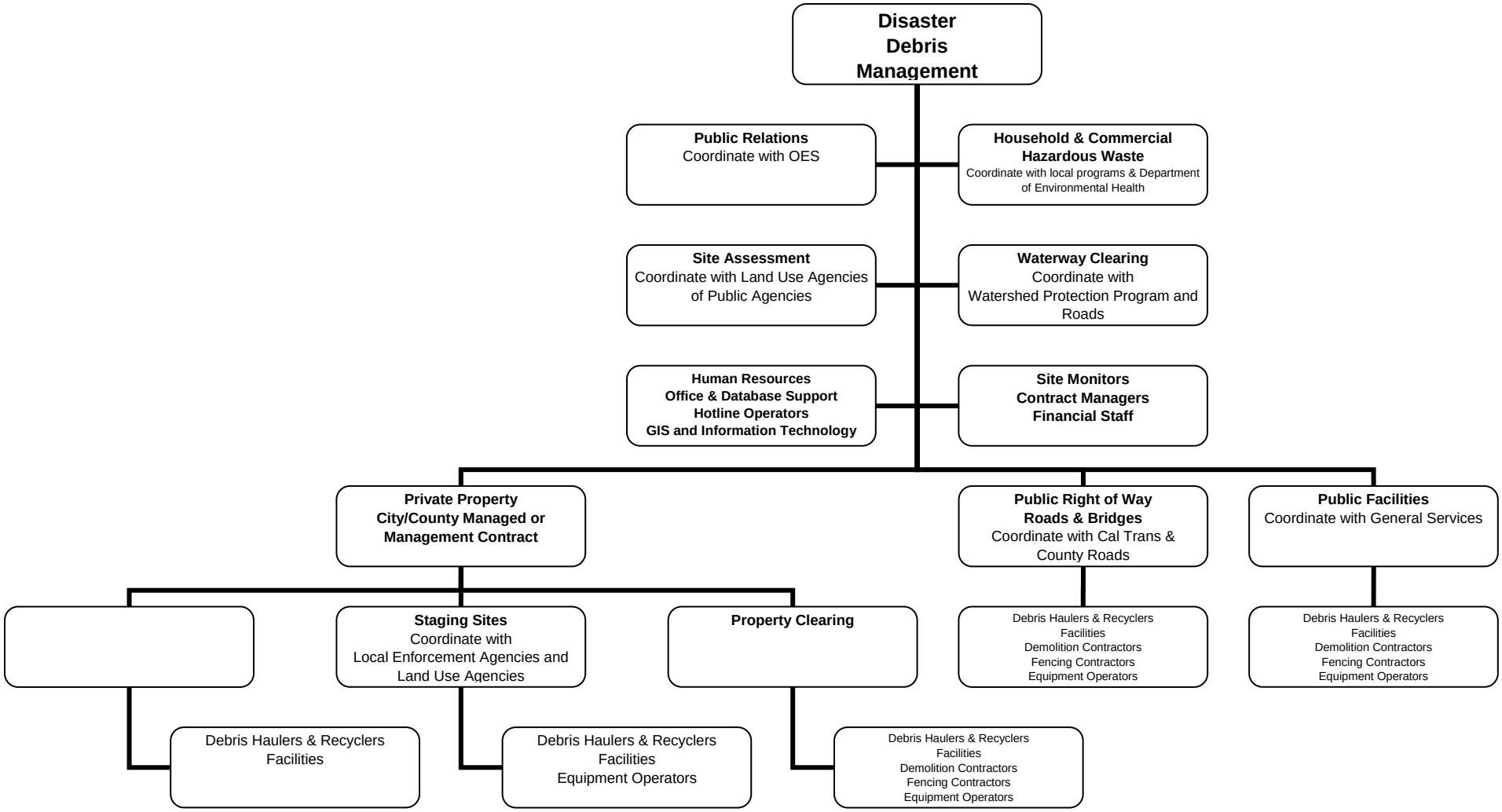
Jurisdictions are encouraged to work together to minimize the impact on local facilities and to utilize cross-jurisdictional contracts for demolition/excavation contractors, debris box haulers and others. Establishing contingency contracts or having sample contracts on-hand is advisable to ensure cost-efficient and timely cleanup response. All plans will include recycling and waste diversion as a priority. By pre-establishing contracts, city/county specific requirements for disadvantaged business enterprises (i.e. minority, women, or disabled veteran, -owned) can be considered. The pre-approved contractors can receive pre-disaster training in techniques to enhance debris recovery and recycling.

In any type of disaster material will be source-separated to the maximum extent possible to minimize program costs and impact to landfills. Jurisdictions may choose to contract directly with facilities for pricing or let debris contractors negotiate rates. There are three levels of processing that will occur:

1. Source-Separated. Clean loads of separated dirt, aggregates, woody materials and metals will be directed to local recycling facilities with the ability to process and market the materials for recycling and reuse.
2. Mixed Inerts. Loads of aggregates and dirt that contain wood, metal and trash not to exceed 10% of the load by volume.
3. Mixed Debris. Loads of mixed materials that for various reasons cannot be source-separated.

These three steps ensure only residual from processing facilities will be sent for landfill disposal.

Figure 1.0
Disaster Debris Management Structure



3. Disaster Debris Recovery Plan

Prior to a disaster, each jurisdiction is encouraged to develop a local ordinance, policy, or resolution related to disaster debris recycling and management. Jurisdictions can also develop a disaster debris plan or use the California Integrated Waste Management Board's (CIWMB) sample plan (Attachment XYZ). Disaster debris recovery plans can vary by jurisdiction and can incorporate a combination of curbside collection and the establishment of centralized collection and processing sites to maximize recycling. Based on the magnitude of the disaster, debris recovery will include the removal of debris from public right-of-way, public facilities and possibly private property.

3.1 STATE RECYCLING AND REPORTING REQUIREMENTS

Under the California Integrated Waste Management Act (AB 939) each city and county is responsible for planning and implementing waste management programs at the local level to maintain a 50% diversion rate each year. The waste tonnage from a disaster can greatly affect a jurisdictions diversion rate. Under state regulations, jurisdictions can receive a tonnage deduction in their state reporting to account for any surges in disposal tonnage. Jurisdictions need to make all feasible efforts to reuse, recycle, or compost disaster wastes for their deduction claim to be considered (California Code of Regulations (CCR), Title 14, Division 7, Chapter 9, Article 9, section 18794.2 (g)(2)). If a jurisdiction is making a disaster debris claim, they will need to submit the disposal tonnage with a report of their recycling efforts and submit it with their annual report for the year of the disaster to the California Integrated Waste Management Board (CIWMB). During any disaster, the County, as the countywide AB 939 coordinator, will work with each jurisdiction and recycling and disposal facilities to ensure that tonnage from disasters is accurately tracked.

3.1.1 Debris Recycling

Most debris can be recycled including metal, concrete, asphalt, yard and tree trimmings. Recycling of disaster debris is consistent with state and local policies regarding solid waste management and the California Integrated Waste Management Board's (CIWMB) Disaster Debris Plan. A 2005 study in the San Diego Countywide Siting Element showed that the region is currently at its maximum permitted annual landfill capacity. Disaster debris will further deplete this capacity; therefore, recycling and reuse must take priority in the handling of debris to guarantee future disposal capacity for municipal solid waste.

During the October 2003 wildfires, the City of San Diego achieved a 59 percent recycling rate and the County achieved a 46 percent rate. Case studies from the Los Alamos fires and Northridge earthquake showed that recycling rates can be as high 95 percent. Recycling will:

- Reduce the long term effects on in-county landfill capacity.
- Reduce disposal costs to jurisdictions and taxpayers.
- Help jurisdictions maintain state-mandated recycling rates.
- Keep aggregate and inert materials (concrete, rock, dirt) available for reconstruction of roads, infrastructure and private property.
- Maintain and augment an employment base for dislocated jobs due to the disaster.

Recycling requirements can be built into contracts to achieve the maximum amount of diversion from disaster debris. Private property cleanup contracts will include language requiring recycling of materials to the greatest extent possible and in accordance with local construction and demolition recycling policies and ordinances. Pricing contracts can be negotiated directly with recycling and disposal facilities. Recycling from public roads and structures can be achieved through contracts for mobile chipping and grinding of concrete, brush and other materials. All demolition contracts will include language requiring recycling and reuse through separation, chipping and grinding of materials. All reconstruction contracts can include the use of building materials that contain recycled materials including road base.

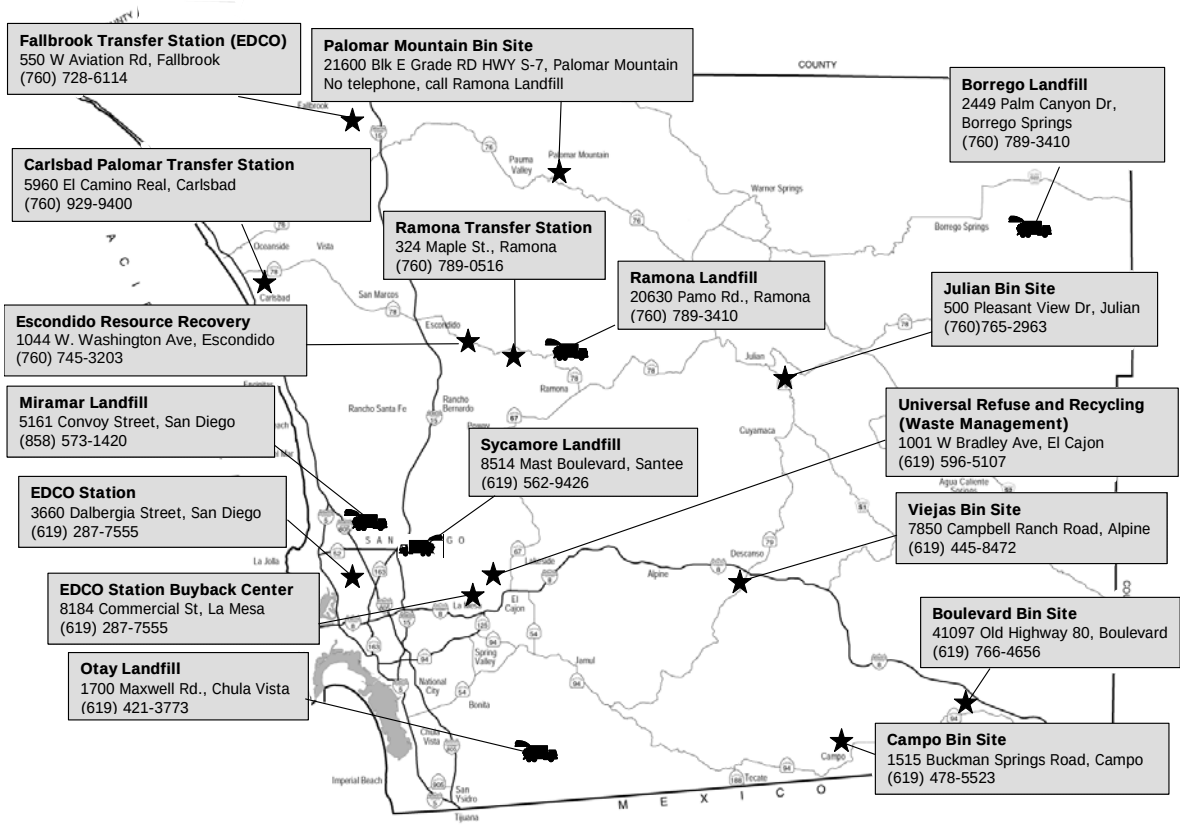
3.2 EXISTING INFRASTRUCTURE

In any type of disaster, the facilities and equipment that are in the highest demand are those that can process mixed debris including rock, concrete, asphalt and wood with some levels of contamination. There are two facilities planned in the County (EDCO Lemon Grove and at the Miramar Landfill) to accept mixed recycling related debris and sites are being considered at the Sycamore and Otay landfills. Additional mixed inert recycling capacity can also be established at source-separated recycling facilities that are willing to allow for greater contamination of materials.

There are five landfills, seven transfer stations and five active rural bin sites in San Diego County that accept municipal solid waste. There are two additional federal landfills located at Camp Pendleton that only accept military waste. Figure 2.0 shows the existing transfer stations, rural bin sites and landfills in San Diego County.

San Diego County has an extensive infrastructure of metal, concrete, asphalt, and wood chipping and grinding source-separated recycling facilities. Local aggregate recyclers have been included and have adequate space to increase their daily accepted material tonnage and stockpiling timeframe.

Figure 2.0
Landfills and Transfer Stations in San Diego County



3.3 PUBLIC ROADS, RIGHT-OF-WAY, BUILDINGS AND STRUCTURES

The California Department of Transportation (Caltrans) is responsible for the construction and repair of State and Federal Highways throughout California. The State Agency uses publicly employed engineers to administer contracts with private construction companies which actually perform the road work.

In a disaster situation, Caltrans is responsible for the immediate clearing of State and Federal roadways as well as the demolition and rebuilding of any damaged road structures (such as bridges) or roadways. In the past, emergency contracts have been issued to clear debris as well as re-build roadways. Emergency contracts have the same language as standard agreements, but they are executed under a separate process, within a much shorter time frame. Emergency contracts and lists of vendors can be in place prior to a disaster as part of planning, to the greatest extent possible.

Debris from County-maintained roads will be handled according the outline in Operational Area Emergency Plan, Annex J. Recycling can be done through contracts for mobile chipping and grinding of concrete, brush and other materials.

Each jurisdiction's General Services Department or equivalent will handle the repair and demolition of public buildings. Fencing and demolition contracts may also be used to take down privately owned structures that are an immediate threat to health and safety. All contracts can include language requiring recycling and reuse through separation, chipping and grinding of demolition and green waste materials.

3.4 HAZARDOUS AND UNIVERSAL WASTES

The State of California has banned the landfill disposal of hazardous and universal wastes and these materials must be handled through hazardous waste programs or authorized universal waste recycling programs or consolidators. These materials include, but are not limited to, the wastes from residents and businesses listed in Table 4.0.

Table 4.0
Hazard Waste Disaster Debris Components

Acids & Caustics	Herbicides	Pool Chemicals
Aerosol Cans	Motor Oil & Filters	Propane Tanks
Antifreeze	Mercury	Railroad Ties
Asbestos (non-friable)*	Paint (Lead, Oil, Latex)	Rechargeable Batteries
Batteries	Painted Wood	Solvents
Contaminated Soils	Paint Thinners	Thinners
Fuel/Gasoline Kerosene	PCBs	Treated Wood*
Glues	Pesticides	Universal Wastes
Fluorescent Lighting Tubes & Ballasts	Poisons	(mercury containing items, T.V.'s, computers, electronics)

**May be disposed in lined areas of a Class III landfill if properly contained and meet the acceptance criteria for each landfill.*

During a disaster, the existing collection programs for hazardous materials and universal wastes will be used, but may need to be modified for additional volume. There are also many approved collectors and recyclers for universal wastes. All jurisdictions currently have their own independent household hazardous waste programs. These programs include permanent drop-off facilities, temporary one-day collection events and door-to-door collection for elderly and disabled residents. There are ten (10) permanent drop-off facilities (Table 5.0).

Table 5.0
Permanent Household Hazardous Waste Facilities

Chula Vista	1800 Maxwell Drive, Chula Vista, 91910
City of San Diego (Miramar Landfill)	5161 Convoy Street, San Diego, 92111
Coronado	1001 6th Street, San Diego, 92118
Ramona (County of San Diego)	324 Maple Street, Ramona, 92065
El Cajon	1001 W. Bradley Avenue, El Cajon, 92020
Escondido	1044 W. Washington, Escondido 92025
La Mesa	8184 Commercial Street, La Mesa 91942
Oceanside	2880 Industry Street, Oceanside 92054
Poway	123325 Crosthwaite Circle, Poway 92064
Vista	1145 E. Taylor Street, Vista 92084

The County's Department of Environmental Health Hazardous Materials Division (HMD) is the Certified Unified Program Agency (CUPA) for San Diego County responsible for regulating hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans. The HMD will be available to give recommendations for commercial hazardous waste handling and removal. The public will be referred to the Hazardous Materials Help desk at (619) 338-2222. Additional information for hazardous waste handling can be found in the Operational Area Emergency Plan, Annex H.

3.5 PRIVATE PROPERTY DEBRIS REMOVAL

Private property debris removal options will vary depending on the magnitude of the disaster. Existing trash and recycling services can be enhanced to handle construction and demolition materials and bulky items such as appliances. Jurisdictions may conduct recovery options with existing staff or hire a consulting firm to coordinate the program. Disaster debris removal is most successful when material is handled as it is normally collected. If a jurisdiction has curbside collection of waste, then this program should continue. Days can be setup for collection of specific materials; i.e. Monday-metals, Tuesdays-concrete, Wednesdays-greenwaste, etc. Staging areas will be needed for storage and recycling to be used by residents and contractors that do not have curbside collection.

3.6 STAGING SITES FOR DISASTER DEBRIS MANAGEMENT

Staging sites will be needed to collect, store and process materials. Sites will serve as centralized areas that residents and contractors to bring materials to for collection, storing and processing. Sites can be located at existing solid waste and recycling facilities and temporary sites in affected communities. Potential sites can be located before a disaster. Recommendations for sites are included in Table 6.0.

Figure 3.0 – Community Recycling & Drop-off Site used during October 2003 Fires

Table 6.0
Potential Staging Sites for Disaster Debris

Recycling Facility	Landfill
Vacant Lot	Corporation Yard
Parking Lot	Right-Of-Way
Private Property	Parks/Golf Course
Transfer Station	City/County-Owned Land
Closed Landfills	Closed rural bin sites

Staging materials offsite from facilities will allow for wood, dirt, and aggregates to stay within local communities, reduce transportation costs and alleviate waiting lines and operational stress at facilities. Staging sites will contain at a minimum areas for sorting of: appliances, mixed inerts, concrete, trash, dirt, wood/greenwaste, metals, hazardous and universal wastes.

Figure 4.0 – Temporary Tub Grinder for Greenwaste for Los Alamos Fires

Prior to a disaster, regulations and statutes will be reviewed to determine the legal authorization to establish staging areas including major use permits and solid waste and recycling permitting. Jurisdictions will work with their local land use authorities, Local Enforcement Agency, and other permitting agencies including Air Pollution Control District, Stormwater Protection, and Regional Water Quality Control Board. Each site will have an environmental remediation plan to comply with state and federal regulations.

A City of San Diego study shows that sites need approximately 20,000 tons to justify the costs of bringing in mobile crushers and grinders. If the material is to be used on site or in the local community for reconstruction, the 20,000 ton threshold is significantly lower. Members of the county's Solid Waste Technical Advisory Committee will work with the City and County of San Diego Local Enforcement Agencies and any local land use authorities to find temporary staging and processing areas.

4. Volunteers

In addition to each jurisdiction's and OES's response, Volunteer San Diego and the American Red Cross can be another valuable resource for disaster debris diversion coordinators. With proper training, volunteers can be helpful in assisting with disaster debris removal, recycling and recovery. Volunteer San Diego maintains a database of potential volunteers and opportunities and is responsible for processing "spontaneous" volunteers who offer help after a disaster occurs. Based on the October 2003 Cedar Fires, and Hurricane Katrina, Volunteer San Diego expects that thousands of spontaneous volunteers will respond to any disasters in the County or across the nation.

Types of activities spontaneous volunteers can perform:

- Oversee and monitor debris removal contractors.
- Assist with labor and equipment operation/donation for debris separation and removal on private property and at staging sites.
- Distribution of door-hangers and flyers for programs and information.
- Master Deconstructors and Recyclers can be trained in advance (can be coordinated through local jurisdictions, not Volunteer San Diego).
- Load inspectors to insure source-separated debris is not contaminated and that debris is actually disaster debris.
- Photo documentation for federal and state reimbursement.

5. Contacts

Each jurisdiction has the following contacts;

- Public Works/Disaster Debris Removal
- Solid Waste Management
- Household Hazardous Waste Contact
- Solid Waste Technical Advisory Committee Member

Table 7.0
Other Contacts for Debris Management

Entity	Responsibility	Contact Information
Air Pollution Control Board	Assists region with air quality issues and permits.	Gary Hartnett 858-5986-2671 gary.hartnett@sdcounty.ca.gov
County of San Diego, Department of Environmental Health, Hazardous Materials Division	Assists with emergencies involving hazardous materials and inspecting facilities to ensure proper identification, storage, and disposal of hazardous waste.	Staff: Nick Vent 619-338-2284 or nick.vent@sdcounty.ca.gov Public Inquiries: Hazardous Materials Help desk at (619) 338-2222
Local Enforcement Agency (City of San Diego)	Assists with temporary and permanent solid waste facility permits for all facilities located in the city of San Diego.	City of San Diego, Vicky Gallagher, LEA Program Manager, (619) 533-3695 vgallagher@sandiego.gov
Local Enforcement Agency (County of San Diego)	Assists with temporary and permanent solid waste facility permits for facilities in all jurisdictions except the City of San Diego.	County of San Diego, Department of Environmental Health Kerry McNeill 858-694-2629 or kerry.mcneill@sdcounty.ca.gov
Regional Water Quality Control Board	Assists region with water quality issues and permits.	John Odermatt 858-637-5595 or jodermatt@waterboards.ca.gov
Solid Waste Technical and Citizens Advisory Committees	Coordinates countywide solid waste and household hazardous waste issues. Members include representatives from each jurisdiction and various community groups.	County of San Diego Solid Waste Planning and Recycling Section (Public Works) Wayne Williams 858-874-4108 or wayne.williams@sdcounty.ca.gov

ATTACHMENT 1: DISASTER SPECIFIC CHECKLISTS

(*To be included at a later date*)

SECTION B

SAN DIEGO OPERATIONAL AREA HAZARDOUS INCIDENT RESPONSE TEAM (HIRT)

STANDARD OPERATING GUIDELINES (SOG)

SAN DIEGO OPERATIONAL AREA

Hazardous Materials Incident Response Team

Standard Operating Guidelines

Public version

Revised May 2011

HIRT Standard Operating Guidelines
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City of San Diego Fire – Rescue Department
&
County of San Diego, Department of Environmental Health

Hazardous Incident Response Team(s)
Standard Operating Guidelines

Introduction:

In an effort to work in a safe and effective manner at hazardous materials incidents within the San Diego County Operational Area, the Joint Hazardous Materials Incident Response Team (HIRT), made up by both the San Diego Fire – Rescue Department (SDFD) and the County of San Diego Department of Environmental Health (DEH), has adopted the following guidelines for use.

When emergencies involving hazardous materials occur, there are three priorities or protection factors that emergency responders must address. The first priority is the prevention of fatalities and injuries to people (Life Safety). The second priority is the prevention of unnecessary damage to the environment or injury of wildlife. And the third priority is the protection of personal property.

To handle an incident in the safest manner and to be able to assess the risk to the general public or the environment, it is necessary to know the properties of the materials and containers involved. Actual methods and procedures used during each incident will vary depending on local conditions. These Standard Operating Guidelines will help in making initial decisions at a Hazmat incident; however, these should not be considered to be a substitute for an individual's own knowledge or judgment. These guidelines can not address all possible variables or contingencies that may be associated with a hazardous material incident, as San Diego County is made up of a wide range of topography, weather, people and possible conditions that can be encountered.

These guidelines are intended to be reviewed before an incident occurs; and should be incorporated into training and exercise preparations. All members of the Hazardous Incident Response Team are encouraged to submit additional HIRT Standard Operating Guidelines as needs become obvious.

1. Response Criteria

Contractual Response Obligations for the Hazardous Incident Response Team (HIRT)

1. **Response Times:** For the portions of the response service area covered by the contract, the Hazardous Incident Response Team (HIRT) shall meet a maximum response time of sixty (60) minutes for ninety percent (90%) of all hazardous materials incident calls dispatched. A second, simultaneous response should have the response team on scene within a maximum response time of ninety (90) minutes. Incident response time begins at the time of a confirmed dispatch, and ends when the first unit arrives at the scene. Time of dispatch shall be determined as the time the initial request for a HIRT response is received from the dispatch center, not the initial contact made with the team. Each month the HIRT shall document in writing each call dispatched which was not responded to within the required time. The HIRT shall make a reasonable effort to identify the cause of a delayed response and document efforts to eliminate the repetition of events that caused the poor response times.

   Response Time Exceptions: Exceptions may include severe weather conditions, disaster, or periods of very high demand on the system, which is defined as three or more hazardous materials incidents occurring at the same time.

2. **Emergency Response Dispatch Procedures**

   a. **Primary procedure:** When the SDFD dispatcher receives requests for hazmat information and/or emergency hazmat response, he/she will contact the Hazmat Captain at Station 44, who will evaluate and gather additional information prior to determining the level of response, and needed resources. The Hazmat Captain will contact the duty DEH emergency responder to coordinate resources and logistics and to determine the level of response needed.

   b. Alternative procedure: In the event that a request for a response should be received by a HIRT member directly from an Incident Commander or other jurisdictional agency without first having been screened by SDFD dispatch, the SDFD Hazmat Captain will be contacted and consulted on the appropriate level of response and to coordinate emergency resources. Single unit HIRT responses to an emergency are inappropriate without first being discussed by both sides of the team except in the most extreme conditions or when it is evident that there is no immediate danger. In such cases, the responding HIRT unit will later notify their County/City partner.

   c. Information only requests: Both the SDFD and DEH HIRT teams may be contacted for questions or advice anytime via a Fire or Law Enforcement Communications Center, DEH's office, San Diego Station 44, cell phone, by direct page, or by other outside jurisdictions. Information only requests do not generally indicate a HIRT response is needed. However, if DEH or SDFD deems that a HIRT response might be warranted, a call will be placed immediately to the DEH

emergency responder or SDFD Hazmat Captain to discuss the appropriate level of response.

3. **Staffing:** The HIRT shall establish and maintain a sufficient number of trained personnel for staffing hazardous materials responses, within the operational area. The minimum number of responding personnel shall be five (5). Four (4) of which will be trained to Hazmat Technician or Specialist level as determined by the State of California under California Health and Safety Code Title 19. The fifth member may be a hazmat trainee.

   Primary Response - consists of 4 SDFD Hazmat personnel and 1 or 2 DEH staff.
   Secondary Response - consists of 4 SDFD Hazmat personnel and 1 or 2 DEH staff.

   A minimum of three (3), usually four (4) staff will be obtained from SDFD and one (1) and possibly two (2) staff will respond from the DEH. Each responding HIRT member will arrive in their own hazmat vehicle that is equipped to handle the response.

4. **Callbacks:** The HIRT shall maintain the ability to implement emergency call back of off-duty team members for secondary responses and/or escalating incidents. The team consists of 24 members from SDFD assigned to shift work and at least one administrative position, and 10 members from DEH that fill the response team with a standby list of two staff rotating on a weekly basis. The Hazmat Group Supervisor should obtain approval from SDFD OS-1 prior to making a callback request, if OS-1 is available. If not, then the Hazmat Group Supervisor has authority to request any resources necessary.

5. **Multiple Responses:** The Hazmat Group Supervisor at the scene of a Hazmat incident is responsible for calling for additional personnel to handle a subsequent incident. The SDFD Hazmat Captain on scene must assure adequate staffing of HM-2 is available. The HM-2 Captain should assist San Diego Fire Dispatch in obtaining necessary callback staffing. The Incident Commander at each incident must always be kept informed of staffing and resource needs.

   a. **Station-44 crew:** The first resource for additional personnel to be drawn from is on-duty Hazmat staff assigned to SDFD station 44. Additional personnel should respond in the engine if only added staffing is needed at the incident.
   b. **Off Duty Callback - SDFD:** The Hazmat Group Supervisor or their designee should make the request through the Dispatch Captain for emergency callback. Callback people can be sent to Station 44 to fill any vacancies there. They may also be sent directly to the scene of the primary incident.
   c. **Off Duty Callback - DEH:** The Hazmat Group Supervisor or their designee should make the request through the on scene DEH team member for emergency callback. The on scene DEH team member has authority to authorize any resources they feel are appropriate to handle the problem. County Communications, Station M, should use the procedures outlined in the after hours dispatch letter provided by DEH to them in order to contact additional DEH staff. Additionally, the DEH responder may, at their discretion, contact additional DEH staff directly as needed. Callback people

will respond to either DEH headquarters to obtain additional vehicles/resources or may be sent directly to the scene of the primary incident.

d. **First Callback Person - SDFD:** The first callback person to arrive at station 44 will contact the Dispatch Captain to confirm available resources, and then make needed follow-up calls as necessary to obtain required personnel. When enough people have arrived, dispatch will be informed.
e. **Extended Fire Fighting:** In the event that E-44 and/or E-38 are involved in fire fighting operations when a hazmat run comes in, the Hazmat Captain shall request the Incident Commander initiate a Hazmat callback. OS-1 should be notified also. San Diego Fire Dispatch will handle callback protocols, through routine methods.

6. **Mobile Phones or Pagers:** Members of the HIRT who are off-duty are encouraged to carry their work mobile phone or pager if not out of town or on vacation.

7. **Response Attire - SDFD:** The standard response uniform for Hazmat responses by on-duty personnel should be either the Class C uniform or Hazmat Red Coveralls. All members of the responding crew should wear the same uniform.

8. **Response Attire - DEH:** The standard response uniform for Hazmat responses by on-duty personnel should be Hazmat Blue coveralls, or other appropriate attire. All members of the responding crew should wear the same uniform.

   When a team member is responding from home or from office duties, as part of an emergency callback, response attire protocols are to be followed.

9. **Level of Entry Selection Criteria:** Personal Protective Equipment (PPE) must be worn whenever emergency response personnel could be exposed to hazardous materials. Applicable state and federal regulations state that the selection of chemical protective material and suit type (vapor-protective or splash protective) must be based on the hazards identified. The material used in these suits must be appropriate for the chemical and physical properties of the hazards.

   No single clothing material protects against all hazards for prolonged periods of time, so selection must be based on the work environment as well as the chemicals that may be present. The atmosphere must be monitored for: flammability, oxygen content, toxicity, radioactivity, physical hazards, electrical hazards, noise, and biological hazards, as applicable to the event.

   The barrier material of the suit chosen for entry into the Hot Zone must resist permeation, degradation, and penetration by the chemicals present at the site, for the required work cycle. Selection of PPE is a complex task and should be performed by personnel with both extensive training and experience. In all instances, clothing should be selected by evaluating its performance characteristics against the requirements and limitations imposed by the response activity.

10. **Services Provided:** The HIRT shall provide emergency response services to actual or threatened releases of hazardous materials anywhere within the boundaries of the operational response area. The HIRT will provide and/or coordinate all personnel, materials and equipment necessary to perform the required emergency mitigation and immediate follow up to the incident. HIRT response activities include, but are not limited to the follow actions:
    - Response to reported hazmat incidents.
    - Evaluating the severity of hazardous materials incidents
    - Determining the resources required to effectively manage or mitigate the incident.
    - Obtaining samples of unknown materials at the scene.
    - Identifying unknown materials, both released and non-released.
    - Evaluating the characteristics and potential health effects of hazardous materials at the scene.
    - Evaluating the characteristics and potential environmental damage of hazardous materials at the scene
    - Selecting proper personal protective equipment (PPE) for all staff at an incident
    - Ensuring two in / two out policy is in place for all entries.
    - Provide Hazmat Safety Officer.
    - Ensuring medical monitoring and medical transport is available.
    - Developing and implementing Incident Action and Site Safety Plans
    - Developing exposure control measures.
    - Assist the Incident Commander in obtaining responsible party information.
    - Ensure all wastes are properly disposed.
    - As DEH has a hazardous waste hauler's variance from the State DTSC, they may, at times, haul hazardous waste for a contract jurisdiction. This would be during times when the contract jurisdiction assumes responsibility for proper waste disposal and the wastes are then transported to one of their facilities where it is subsequently disposed.
    - Assist in obtaining financial resources required to cleanup and properly dispose of all wastes.
    - Ability to perform rescues within the Exclusion Zone of an incident.
    - Ensuring that appropriate notifications are made to other government agencies
    - Maintain a current Resources Manual with a list of Federal, State, County, and City agencies.
    - Perform any additional safe actions deemed necessary by the Incident Commander (I.C.) that are within the team's level of training and resources as defined by the State of California and Code of Federal Regulations.

    The HIRT will also provide as necessary all administrative and supervisory personnel to ensure that emergency response personnel are available on a 24-hour basis and that responses are conducted in accordance with the specifications of the San Diego Unified Hazardous Materials Incident Response Plan, the Incident Command System, and California Occupational Safety and Health (OSHA) requirements.

11. **Notifications:** The HIRT will assist, advise, and update the Incident Commander of the appropriate notifications that must be made. These may include, but are not limited to;

- Federal Agencies such as the US Coast Guard, Drug Enforcement Agency, Federal Bureau of Investigations, US Fish and Wildlife, and the Environmental Protection Agency Region IX.
- State Agencies such as the California Department of Public Health, Cal Fish & Game, Cal Trans, California Highway Patrol, and Cal OSHA,
- County Agencies such as the Air Pollution Control District, Department of Agriculture, County Sheriff and Bomb/Arson Squad, Department of Animal Services, Health and Human Services Agency, Department of Public Works, and all of the Divisions within the Department of Environmental Health.
- Local Agencies such as the Regional Water Quality Control Board, Metropolitan Medical Strike Team, local law enforcement and bomb squads, local roads divisions, water and sewer districts, emergency hospitals, and other resources as needed.

The HIRT will maintain and keep an updated Resource Manual with a list of the Local, County, State, and Federal agencies requiring notification. HIRT will assist the I.C. in making these notifications and requesting additional resources as required.

Proposition 65 notifications: The California Health and Safety Code requires "Designated Employees" to report discharges or threatened discharges of hazardous waste that have caused or are likely to cause injury to people or substantial damage or contamination to food, crops, water supply, air or the environment. Reports must be submitted to the County Department of Environmental Health within 72 hours. County Health will then notify the local media. When DEH is on scene during an incident this notification can be considered complete without additional calls required.

Significant Incident Notifications

***** Certified Unified Program Agency (CUPA)	(Daytime Emergency)	(858) 505-6673
DEH Hazardous Materials Division	(After hours)	(858) 565-5255
* State Warning Center		(800) 852-7550
* National Response Center		(800) 424-8802
* FBI (For possible terrorist Incidents)		(619) 565-1255
* Drug Enforcement Agency		(858) 616-4100
* Pesticide spill - County Agriculture		(858) 694-2739
* Spill on State Highway / Freeway - Notify California Highway Patrol		(858) 637-3800
* Radiological Release - DEH	(Daytime)	(858) 505-6673
	(After hours)	(858) 565-5255

* Releases impacting state waterways notify Dept. of Fish and Game and/or the US Coast Guard.

Cal Fish and Game (Daytime)			(858) 467-4201
Cal Fish and Game (24hr dispatch)	(951) 443-2969	or	(888) 334-2258
US Coast Guard			(619) 278-7033

* Storm-water Enforcement Programs - Notify Local Jurisdiction

* Release of hazardous material within 1/2 mile of public school, notify School District Superintendent or Principal of School directly. (See Lists)

* Proposition 65 notifications to DEH	(Daytime)	(858) 505-6657
	(After hours)	(858) 565-5255

12. **Hazmat Team Functions within ICS:** The HIRT shall operate on all hazardous materials incidents following the Incident Command System. Eight to twelve individuals are commonly required in the Hazardous Materials Group to make a well-coordinated entry and recovery. A minimum of two staff are required on the Entry Team, with two staff on the Backup Team. This use of a "buddy system" is required under OSHA and EPA regulations. In addition a Decontamination Team will always be set up prior to any entries into the Hot Zone being made. Additional personnel including medical may be needed if the work in the Hot Zone is complex. All persons who take offensive actions during a hazmat response shall be trained to at least the Hazardous Materials Technician level.

13. **Additional Personnel Resources Available**

    a. **Use of Camp Pendleton Fire Department Hazmat:** There is currently one Camp Pendleton Fire Department Hazmat stationed at Station 1 on Camp Pendleton. This unit is available for emergency assistance on a mutual aid basis and is to be considered an asset to the HIRT. No other jurisdictions may request their service off base. Requests must go through SDFD dispatch (858) 974-9891, City Hazmat, or County Hazmat. Camp Pendleton Dispatch line: (760) 725-4321.

    b. **Use of DEH within City of San Diego:** DEH personnel are to be notified by the SDFD Hazmat team whenever a County permitted facility is involved in a hazardous materials incident, or when DEH specialized expertise can be utilized. This would involve areas such as permitting hazardous waste generators, the proper disposal of hazardous waste, transportation and storage of hazardous materials and wastes, and any enforcement activities needed.

    c. **Use of First Responders:** Fire fighters and law enforcement personnel, trained to the Hazmat First Responder Operations level may be used in many Hazmat Group positions outside of the Hot Zone. These include; Medical Monitoring, Decontamination, and Site Access Control.

d. **Use of DEH Staff:** Environmental Health Department staff that have been provided training on Decontamination may be called to assist with mass casualty decontamination. They would likely function within MMST Hazmat Group.

14. Informational Resources Available: The following are some of the sources of technical information that can provide assistance during an emergency response.

a. National Response Center (NRC): **(800) 424-8802**. This hotline is to be used for required reporting of incidents where hazardous materials have been released in excess of reportable quantities (RQ), are responsible for death, serious injury, property damage in excess of $50,000 or a continuing danger to life or property exist. DOT and EPA require this notification. The NRC will help you contact other federal support agencies for on-site response or to provide other technical assistance.

b. CHEMTREC: **(800) 262-8200**. This is a 24-hour emergency phone number operated by the Chemical Transportation Emergency Center, and provided as a public service by the Chemical Manufacturers Association. It helps identify unknown chemicals, and can provide advice on proper initial response methods and procedures for specific chemicals and situations.

c. Agency for Toxic Substances and Disease Registry (ATSDR) **(800) 232-4636**. This service is provided as part of the U.S. Public Health Service. Experts are available for consultation and advice in the areas of emergency response coordination, toxicology, chemistry, medicine, and environmental health.

d. National Pesticide Information Center: **(800) 858-7378** provides information on pesticide-related health effects and minor cleanup procedures to physicians, veterinarians, and fire departments.

e. American Petroleum Institute: **(202) 682-8000**

f. Association of Oil Pipelines: **(202) 408-7970**

g. DOT Pipeline and Hazardous Materials Safety Administration: **(202) 366-4433**

h. Interstate Natural Gas Associations: **(202) 216-5900**

i. American Chemistry Council: **(703) 741-5000**

j. Computer Programs on CD (On each response vehicle computer pending subscription renewals):
   1. Genium's MATERIAL SAFETY DATA SHEETS – CDs of approximately 1000 MSDSs for commonly used chemicals.
   2. Micromedex TOMES CPS System – Extensive files (106,000+ chemicals) on most commonly used chemicals.

3. County of San Diego's Permit Tracking Database – CD of hazmat permitted occupancies within San Diego County.
4. Farm Chemical Handbook – Pesticide and herbicide data base cross referenced by chemical and product trade name.
5. See instruction manuals onboard vehicles

k. Printed References for Emergency Response carried on HZM1 and HZM2:
*CHRIS (Chemical Hazards Response Information System)
*Condensed Chemical Dictionary (Hawley's)
*Dangerous Properties of Industrial Materials (Irvin Sax)
*Emergency Action Guides (Association of American Railroads)
*Gardner's Chemical Synonyms and Trade Names
*Handbook of Compressed Gases
*Handbook of Reactive Chemical Hazards (Bretherick's)
*Pocket Guide to chemical Hazards (NIOSH)
*Farm Chemical Handbook
*Fire Protection Guide to Hazardous Materials (NFPA)
*Toxic and Hazardous Industrial Chemical Safety Manual

2. Incident Documentation

Incident Specific Reports: The following are brief explanations of required plans and reports completed during a typical hazardous materials incident.

1. **Hazmat Incident Reports:** All hazmat responses are documented in a Microsoft Access computer data base for storage and data search purposes.
    a) A computer terminal, located at station 44, is used for this purpose within SDFD. Instruction manuals are kept next to the terminal. Fax a copy of the completed report to OS-1, and file one copy in the appropriate binder.
    b) DEH uses a LAN based server program. Response data contained within this system start in January 1987. The Response Services Technician does the data input. Incident numbers are coordinated on a weekly basis between DEH and SDFD to maintain accuracy. Daytime responders review completed reports on a monthly basis. Reports are kept in a main file within DEH.

2. **Call Screening Form:** All telephone calls regarding a potential hazmat response should be documented on a Call Screening Form. These should be kept near the office phone at Stations 44. DEH should be contacted if there is any question whether a response is warranted or not or if there is any questions regarding DEH regulated establishments.

3. **Daybook:** Basic information about all hazmat incidents will be recorded in the Fire Department's Engine or Truck Company Daybook. Information entered here includes: Incident number, dispatch time, location, and nature of response. Information will be used to coordinate report-tracking numbers with DEH and maintain consistency of information.

4. **Incident Action Plan:** The Incident Action Plan is initially prepared during the first meeting of emergency personnel on scene at a hazmat incident. The Incident Action Plan contains control objectives reflecting the overall incident strategy. This provides for a smooth, well-coordinated incident. An Incident Action Plan will often start as verbal, but will be written down as part of the HIRT's combined Incident Action and Site Safety Plan.

5. **Site Safety Plan:** A Site Safety Plan is required for operations at hazardous materials incidents under 29 Code of Federal Regulations (CFR) section 1910.120 and California General Industry Safety Orders (GISO) Title 8, section 5192. All phases of the incident are to be addressed in the plan and all personnel on site are to be briefed on its contents prior to making entry into the hot zone. HIRT uses a combined Incident Action and Site Safety Plan.

6. **Incident Accident Report**: Any person injured or otherwise exposed during a hazardous materials incident shall be gathered by the HIRT. This includes emergency first responders, members of the HIRT, and anyone of the general public that may have been exposed during a hazardous materials incident.

7. **Proposition 65 Disclosure:** Prop 65 (California Health & Safety Code) requires "designated employees" to report discharges or threatened illegal discharges of hazardous waste that has caused or is likely to cause injury to people or substantial damage or contamination to food,

crops, water supply, air or environment. The report must be submitted to the San Diego County Health Department within 72 hours of the discharge.

The designated public employees within the San Diego Fire Department are OS-1 and up in the command structure. All members of the DEH part of the HIRT team are designated employees under the definition. Coordinate notifications to County Health through OS-1. Notify OS-1 and County Health through the DEH representative to the team as soon as possible at a reportable incident. Notation should be made of the notification in the incident log and on the Incident Action and Site Safety Plan completed at all incidents.

8. **FIRMS:** The City of San Diego's Fire Incident Reporting Management System Hazmat Supplement sheet is completed by a designated SDFD hazmat crew member for all responses. These are forwarded to Data Entry by Interoffice mail.

9. **CalEMA (California Emergency Management Agency) Warning Center:** DEH staff will ensure that the CalEMA Warning Center (800) 852-7550 is notified on all reportable hazardous materials incidents. This notification generates a CalEMA control number which is to be recorded on the HIRT report. Minor incidents (waste oil, petroleum spills of less than 42 gallons, small sewage overflows, household toxics, and leaks in low pressure fuel lines to residential property) will ordinarily not be reported nor require a CalEMA control number.

10. **Uniform Hazardous Waste Manifest:** In order to properly transport and dispose of any hazardous waste, a generator of that waste must sign a Uniform Hazardous Waste Manifest. During a hazardous materials incident requiring the proper disposal of wastes, if a responsible party (RP) has been located, they will be required to sign the Uniform Hazardous Waste Manifest. In the event that an RP cannot be located, the jurisdiction with response authority will sign the manifest. In the cases of a superfund cleanup requiring a manifest to be completed, DEH Hazmat will be considered the generator of hazardous waste so long as there is no known responsible party. Whoever signs the manifest is then responsible for the waste and must ensure proper packaging, transport, treatment, storage, and disposal through the waste manifest procedure. A licensed hazardous waste cleanup company representative will usually assist in this procedure.

11. **Waste Oil Transfer Receipts:** SDFD HIRT will complete a Used Oil Transfer form when waste oil is abandoned on City of San Diego property and the Environmental Protection Unit (EPU) transports waste oil to a SDFD Repair facility. One of these forms must be sent with each 20-gallon shipment of waste oil. Retain pink copy for Station records.

12. **Hazardous Substance Analysis Form (Hazcat):** This one page document is used by the HIRT to document tests performed on materials to identify or confirm its identity. A copy of the form is to accompany any wastes and shipping papers completed when being sent for disposal. A copy is to be provided to the registered Hazardous Waste Hauler, or EPU unit transporting the waste. One copy is to be kept with the Hazmat Report on file.

13. **County DPW Waste Receipts:** The DEH has agreed to transport wastes for the County DPW from incidents on County maintained roads to the appropriate DPW Division

Headquarters. A DPW waste receipt must be completed and a copy provided to the Supervisor at the road station where the waste is transported. A copy of this receipt is to accompany the HIRT report.

14. **Cost Recovery:** Because of the high cost of hazardous materials emergency responses, the City and County of San Diego have enacted cost recovery ordinances that provide for invoicing RP's for reimbursable expenses. There are several Health and Safety, County, and Municipal Codes that provide for cost reimbursement for cleanup and response costs, if the incident involved a criminal action such as the intentional dumping of hazardous waste or a facility's negligence that resulted in the release of hazardous wastes. The Hazmat Group Supervisor or DEH staff person can recommend cost recovery by checking yes on a data entry panel in the SAS report or marking the appropriate box on the HIRT report completed by DEH.

    Invoicing for HIRT responses within the Operational Area are handled by the County's Office of Emergency Services (OES). Care must be taken to ensure that HIRT staff accurately tracks their time during HIRT responses. Invoicing of responses within the City of San Diego is handled by the City of San Diego. Other jurisdictions within the Operational Area have the authority to invoice for its costs without utilizing the Office of Emergency Services. Applicable codes are kept on a clipboard next to the SAS TERMINAL. An equipment cost list is also kept here and all costs should be included on the appropriate data entry panel.

15. **Post Incident Critique Procedures**

    INCIDENT CRITIQUE POLICY - The following guidelines will be adhered to regarding hazardous materials incident critiques:

    The Incident Commander representing the fire agency having jurisdiction is responsible for the critique of all:

    1. Hazardous materials incidents involving fire departments or fire districts.
    2. Hazardous materials incidents where City Government(s) have jurisdiction.
    3. Any incident the Incident Commander determines to be significant to emergency operations, i.e., incidents involving multi-victims, multi-agency or severe adverse impact to the environment.

    All Hazardous Materials Incident Response Reports from the Hazardous Incident Response Team (HIRT) are required for the above incidents and are to be forwarded through channels to the Incident Commander or Fire Agency for the jurisdiction requesting the formal critique. The Health and Safety Officer for the incident or his designee will forward their observations to the Incident Commander prior to the critique with a completed copy placed in the HIRT Report File(s) for San Diego Fire and the Department of Environmental Health. The Program Administrator and team supervisors from both SDFD & DEH will be notified of the time and date of critique as soon as established.

Incidents that only involve DEH or SDFD staff, the designated DEH or SDFD on-site Safety Officer or HAZMAT Group Supervisor will conduct the critique. Written critiques are only to be done at the request of the Incident Commander or appropriate Supervisor. The Hazmat Critique will normally be held within 2 weeks following the incident. Results and recommendations of the critique will be reviewed with appropriate HIRT staff and other Emergency Responders following the incident or at a routine monthly staff meeting as appropriate.

The following areas should be critiqued:

1. Command System
2. Tactics - Mitigation and Control and Environmental Evaluation
3. Communications
4. Decontamination procedures used
5. Personnel Health and Safety

A written report of the results of the critique will be forwarded to the appropriate Program Managers and Chiefs for their review and comments.

16. **Medical Monitoring:** Only individuals who have been cleared by a physician for work in chemical protective clothing can be considered for work in such clothing and thus, in a hot zone involving hazardous materials. The health status of potential members of the Entry Team and Backup Team should be checked before protective clothing is donned. At a minimum, vital signs including blood pressure, pulse, and temperature should be checked and recorded on the pre-entry checklist and then after work has been done in the hot zone. Vital signs above any of the recognized standards of an elevated oral temperature greater than 99 degrees F, a resting pulse greater that 100 beats per minute, or a blood pressure in excess of 150/90 should preclude an individual from work in protective clothing. An Oral or Tympanic temperature in excess of 100.4 degrees F. or a resting pulse rate that will not return below 100 beats per minute will be considered levels to exclude the individual from the incident. Fluids should be taken by all members donning protective clothing to prevent excessive water loss through sweating.

17. **Individual Documentation:** The following are brief explanations of recommended reports to be completed following a hazmat incident during and/or upon return to quarters.

- **Incident Exposure Report:** All staff shall make every effort to prevent personal exposure to hazardous materials by using safe, established operating procedures. Even with such procedures exposures can occur. In the event of an exposure to a potentially hazardous material during an incident;
  a) The exposed individual, if able, will complete a Minor Injury Report form, or an Accident Injury Report form. A copy of the completed form is to be submitted to the Hazmat Group Supervisor during the incident or as soon after as possible. Another copy is to be submitted to their respective supervisors after the incident.
  b) The Hazmat Group Supervisor will then assure that the Incident Site Safety Officer is given a copy in compliance with OSHA regulations.

c) A physician (trained in toxicology) should be consulted during the incident or after the individual has been assessed by EMS personnel on scene. The physician should provided guidance regarding the appropriate care of any individuals exposed. Note: Individuals may not show immediate health problems.
d) The exposure should be documented in the hazmat incident report.
e) A copy of all Exposure or Accident/Injury forms will be forwarded to the respective department's personnel office for review and investigation in compliance with OSHA's Injury Illness Prevention Program.
f) The individual exposed should keep a copy of all exposure forms.

- **Minor Injury Report:** When a hazmat responder is exposed to hazardous materials before or after an incident but exhibits no immediate health problems, a Minor Injury Report, or an Accident Injury Report form should be completed to document the exposure.
  a) The exposed individual will complete the appropriate form. And submit the completed form to their respective supervisor.
  b) The department's hazmat physician (trained in toxicology) should be consulted to provide guidance regarding the appropriate care of any individuals exposed. This may include a recommendation to have the individual assessed by a physician.
  c) A copy of all Exposure or Accident/Injury forms will be forwarded to the respective department's personnel office for review and investigation in compliance with OSHA's Injury Illness Prevention Program.
  d) The individual exposed should keep a copy of all exposure forms.

3. Decontamination

DECONTAMINATION PROCEDURES.
Decontamination is the process of removing or neutralizing contaminants that have accumulated on personnel and equipment. This process is critical to health and safety at hazardous material response sites. Decontamination protects end users from hazardous substances that may contaminate and eventually permeate the protective clothing, respiratory equipment, tools, vehicles, and other equipment used in the vicinity of the chemical hazard; it protects all plant or site personnel by minimizing the transfer of harmful materials into clean areas; it helps prevent mixing of incompatible chemicals; and it protects the community by preventing uncontrolled transportation of contaminants from the site.

The Decon team is responsible for implementing the decontamination of contaminated personnel and equipment at the incident. The Decon team leader is responsible for implementing and coordinating the activities within the contamination reduction corridor and communicating with both the entry team and site access control team leader. The structure for operations shall be according to the ICS as described herein.

There are three types of decontamination:

- **Gross decontamination:** To allow end user to safely exit or doff the chemical protective clothing.
- **Decontamination** for reuse of chemical protective clothing and equipment.
- **Emergency decontamination:** Refers to the rapid removal of contaminants in the field in as urgent and expedient a method as possible. This is performed on personnel or exposed persons that have had direct exposure to materials and may be displaying symptoms associated with that exposure. **Mass casualty decontamination** is an extension of emergency decontamination.

PREVENTION OF CONTAMINATION.
The first step in decontamination is to establish procedures that minimize contact with chemicals and thus the potential for contamination. For example:

- Stress work practices that minimize contact with hazardous substances (e.g. do not walk through areas of obvious contamination, do not directly touch potentially hazardous substances).
- Use remote sampling, handling, and container-opening techniques (e.g. drum grapples, pneumatic impact wrenches).
- Protect monitoring and sampling instruments by bagging. Make openings in the bags for sample ports and sensors that must contact site materials.
- Wear disposable outer garments and use disposable equipment where appropriate.
- Cover equipment and tools with a strippable coating that can be removed during decontamination.
- Encase the source of contaminants, e.g. with plastic sheeting or overpacks.
- Ensure all closures and ensemble component interfaces are completely secured; and that no open pockets that could serve to collect contaminant are present.

TYPES OF CONTAMINATION.

Surface Contaminants. Surface contaminants may be easy to detect and remove.

Permeated Contaminants. Contaminants that have permeated a material are difficult or impossible to detect and remove. If contaminants that have permeated a material are not removed by decontamination, they may continue to permeate the material where they can cause an unexpected exposure.

Four major factors affect the extent of permeation:

- **Contact time.** The longer a contaminant is in contact with an object, the greater the probability and extent of permeation. For this reason, minimizing contact time is one of the most important objectives of a decontamination program.
- **Concentration.** Molecules flow from areas of high concentration to areas of low concentration. As concentrations of chemicals increase, the potential for permeation of personal protective clothing increases.
- **Temperature.** An increase in temperature generally increases the permeation rate of contaminants.
- **Physical state of chemicals.** As a rule, gases, vapors, and low-viscosity liquids tend to permeate more readily than high-viscosity liquids or solids.

DECONTAMINATION METHODS.

Decontamination methods either: (1) physically remove contaminants; (2) inactivate contaminants by chemical detoxification or disinfection/sterilization; or (3) remove contaminants by a combination of both physical and chemical means.

Personnel and equipment are usually decontaminated by scrubbing with a detergent-water mixture using a soft-bristle brush followed by rinsing with copious amounts of water. While this process may not be fully effective in removing some contaminates (or in a few cases, contaminants may react with water); it is a relatively safe option compared with using a chemical decontaminating solution. This requires that the contaminant be identified. A decontamination solution is then needed that will change the contaminant into a less harmful substance or allow it to be removed from the material it is adhered to. Especially troublesome are unknown substances or mixtures from a variety of known or unknown substances. The appropriate decontamination solution must be selected in consultation with the technical reference specialist. Additionally, the decontamination procedure may result in large quantities of waste rinse water that must be disposed properly.

DECONTAMINATION SOLUTION FORMULAS

SOLUTION A: A solution containing 5% Sodium Bicarbonate ($NaHC0_3$) "Soda Ash" and 5% Trisodium Phosphate ($Na_3\ P0_4$) "TSP". To five gallons of water, add two pounds of Sodium Bicarbonate and two pounds of Trisodium Phosphate. Stir until evenly mixed and dissolved.

SOLUTION B: A solution containing 10% Calcium Hypochlorite ($Ca(CIO)_2$) "Pool Shock"

SOLUTION C: A solution containing 5% Trisodium Phosphate (Na_3P0_4) "TSP". To five gallons of water add one pound of Trisodium Phosphate. Stir until evenly mixed and dissolved.

SOLUTION D: A solution of Hydrochloric Acid (HCI). To five gallons of water add 8 oz. of hydrochloric acid. Stir until evenly mixed and dissolved.

SOLUTION E: A solution containing concentrated liquid detergent. To five gallons of water, add one cup of a concentrated liquid detergent. Stir until evenly mixed and dissolved.

HAZARD SUSPECTED:	PREFERRED SOLUTION:
Inorganic acids, metal processing wastes, heavy metals, mercury, lead, cadmium, etc.	Solution A
Pesticides, fungicides, chlorinated phenols, dioxins, pcps, cyanides, ammonia and other non-acidic inorganic wastes	Solution B
Solvents and organic compounds Trichloroethylene, Chloroform and Toluene, PBB's and PCB's	Solution C or Solution A
Oily, Greasy, unspecified wastes	Solution C
Inorganic Bases, Alkali and Caustic Waste	Solution D
General cleaning and to remove previously used Decon solutions	Solution E

TESTING THE EFFECTIVENESS OF DECONTAMINATION.
Protective clothing or equipment reuse depends on demonstrating that adequate decontamination has taken place. Decontamination methods vary in their effectiveness and unfortunately there are no completely accurate methods for nondestructively evaluating clothing or equipment contamination levels.

Methods which may assist in a determination include:

- Visual examination of protective clothing for signs of discoloration, corrosive effects, or any degradation of external materials. However, many contaminants do not leave any visible evidence.
- Wipe sampling of external surfaces for subsequent analysis; this may or may not be effective for determining levels of surface contamination and depends heavily on the

material-chemical combination. These methods will not detect permeated contamination.

- Evaluation of the cleaning solution. This method cannot quantify clean method effectiveness since the original contamination levels are unknown. The method can only show if chemical has been removed by the cleaning solution. If a number of garments have been contaminated, it may be advisable to sacrifice one garment for destructive testing by a qualified laboratory with analysis of contamination levels on and inside the garment.

DECONTAMINATION PLAN.

A decontamination plan should be developed and set up before any personnel or equipment are allowed to enter areas where the potential for exposure to hazardous substances exists. The decontamination plan is to be incorporated into the Incident Site Safety Plan. Considerations when developing a decontamination plan include the following:

- Determine the number and layout of decontamination stations;
- Determine the decontamination equipment needed;
- Determine appropriate decontamination methods;
- Establish procedures to prevent contamination of clean areas;
- Establish methods and procedures to minimize wearer contact with contaminants during removal of personal protective clothing; and
- Establish methods for disposing of clothing and equipment that are not completely decontaminated.

1. The plan should be revised whenever the type of personal protective clothing or equipment changes, the use conditions change, or the chemical hazards are reassessed based on new information.
2. The decontamination process should consist of a series of procedures performed in a specific sequence. For chemical protective ensembles, outer, more heavily contaminated items (e.g. outer boots and gloves) should be decontaminated and removed first, followed by decontamination and removal of inner, less contaminated items (e.g. jackets and pants). Each procedure should be performed at a separate station in order to prevent cross contamination. The sequence of stations is called the decontamination line.
3. Stations should be separated physically to prevent cross contamination and should be arranged in order of decreasing contamination, preferably in a straight line. Separate flow patterns and stations should be provided to isolate workers from different contamination zones containing incompatible wastes. Entry and exit points to exposed areas should be conspicuously marked. Dressing stations for entry to the decontamination area should be separate from redressing areas for exit from the decontamination area. Personnel who wish to enter clean areas of the decontamination facility, such as locker rooms, should be completely decontaminated.
4. All equipment used for decontamination must be decontaminated and/or disposed of properly. Buckets, brushes, clothing, tools, and other contaminated equipment should be collected, placed in containers, and labeled. Also, all spent solutions and wash water should be collected and disposed of properly. Clothing that is not completely decontaminated should be placed in plastic bags, pending further decontamination and/or disposal.

5. Decontamination of workers who initially come in contact with personnel and equipment leaving exposure or contamination areas will require more protection from contaminants than decontamination workers who are assigned to the last station in the decontamination line. In some cases, decontamination personnel should wear the same levels of protective clothing as workers in the exposure or contaminated areas. In other cases, decontamination personnel may be sufficiently protected by wearing one level lower protection (e.g., wearing Level B protection while decontaminating workers who are wearing Level A).

DECONTAMINATION FOR PROTECTIVE CLOTHING REUSE.
Due to the difficulty in assessing contamination levels in chemical protective clothing before and after exposure, the responsible supervisor or safety professional must determine if the respective clothing can be reused. This decision involves considerable risk in determining clothing to be contaminant-free. Reuse can be considered if, in the estimate of the supervisor that : (1) No "significant" exposures have occurred and (2) Decontamination methods have been successful in reducing contamination levels to safe or acceptable concentrations.
Note: Contamination by known or suspected carcinogens should warrant automatic disposal. Use of disposable suits is highly recommended when extensive contamination is expected.

EMERGENCY DECONTAMINATION.
In addition to routine decontamination procedures, emergency decontamination procedures must be established. In an emergency, the primary concern is to prevent the loss of life or severe injury to personnel. If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination should be continued.

If an emergency due to a heat-related illness develops, protective clothing should be removed from the victim as soon as possible to reduce the heat stress. During an emergency, provisions must also be made for protecting medical personnel and disposing of contaminated clothing and equipment

MASS CASUALTY DECONTAMINATION
Mass Casualty decontamination is an extension of Emergency decontamination, only performed on large numbers of people at the same time. This decontamination will utilize multiple engine companies positioned in a predetermined orientation. Generally a converging streams method of decontamination will be utilized as follows:

1. First responding engine company will use a low flow fog nozzle to wash down individuals away from the engine.
2. The second responding engine company will lay a supply line to the nearest fire hydrant, and pull into a "V" shaped position relative to the first engine on scene. The wide

portion of the V shape should face down hill and downwind if at all possible. A supply line will then be laid to the first engine.

3. The fog nozzle on the monitor (deck gun) for each engine will be opened to about a 15-degree spray pattern and aimed toward the wide portion of the V formed by the two engines. The converging streams should intersect about 20 feet in the air and just outside the enclosure area formed by the engines. Runoff water from the converging streams should flow away from the engines and triage area.
4. Basic instruction should be conveyed to the contaminated individuals involved using a public address system and include; "Remain where you are until you enter the shower. Then remove your clothes and put on the garment provided."
5. Individuals are to enter the converging streams and stay within the spray pattern for at least 30 seconds. While inside the spray area, Drop their outer clothing and proceed out of the spray pattern where they will be provided a privacy garment package.
6. Individuals should proceed between the two engines toward the cold zone and be evaluated (Triaged) by the Medical Group on scene.

4. Hazard Specific Operations

1. Explosive and Shock Sensitive Materials

When HIRT is called for shock sensitive and explosive materials, there should be an immediate request to evacuate the area and no attempt should be made by the requesting party to open or move any of the suspected containers. Treat all containers as if they were a live bomb. Exercise patience and caution.

Examples of extremely hazardous shock sensitive materials:

- Class A Explosives - These can be set off by a direct blow or spark.
- Azides - Almost all of the metal azides are explosive and light sensitive.
- Fulminates - Explosive materials with carbon/nitrogen/oxygen groups that are shock sensitive.
- Ethyl ethers - These can form explosive peroxides during storage.
- Picric Acid - Severe explosion risk when dried out or heated, especially reactive with metals.
- Organic Peroxides - Contamination of organic peroxides can cause violent reactions. Some of these are shipped under refrigeration. If refrigeration fails product could decompose.

a. Useful Contacts:

SDFD's Explosive Disposal Team			(619) 236-6815
SD County Sheriff's Bomb Squad	(619) 956-4980	or	(619) 565-5255
DEH-HIRT (daytime)			(858) 505-6673
DEH-HIRT (after-hours: Station M)			(858) 565-5255
Bureau of Explosives			(719) 584-0749

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Initiate evacuations as soon as possible. Consult DOT Guide for distances.

*Response by the bomb squad is recommended.

*No attempt should be made by members of HIRT to touch or open any containers/packages.

*If Class A Explosives are on or near fire, consider large evacuation distances (1/2 to 1 mile).

*Treat all military devises and ammunition as "Class A" explosives.

*Consider all "Class B and C" explosives ready to detonate when fire or sources of ignition are present.

2. Flammable Gases

Examples of flammable gases include acetylene, butadiene, carbon monoxide, ethane, natural gas with high methane content, and liquefied petroleum gases (butane, isobutane and propane). The amount of flammable material is respectively much greater per unit volume when a flammable gas is stored in liquefied form.

a. Useful Contacts:

SDGE emergency:	(619) 234-6234	or	(800) 611-7343	
Airgas	(866) 734-3438	or	(800) 224-7427	
Air Products and Chemicals, Inc.	(800) 523-9374	or	(760) 931-9555	
Amerigas			(858) 578-6513	
Parsons			(858) 278-2050	
PraxAir	(800) 225-8247	or	(800) 645-4633	or (619) 232-7341
Petrolane (aka Amerigas)			(760) 728-1424	
Stoody Industrial Welding & Supply Inc.			(619) 234-6750	
Westair Gases & Equipment			(619) 239-7571	

Always contact manufacturer and owner of tanker if possible.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Consult Handbook of compressed Gases (Compressed Gas Assoc.)

*Stay UPWIND/UPGRADE. Is gas heavier or lighter than air?

*Initiate evacuations as soon as possible (use D.O.T. Guidebook for distances).

*Remove all ignition sources - including sources of static electricity, and electric switches.

*If safely possible, shut off flow of gas.

*Place hose lines to protect entry personnel.

*Monitor area with CGI's. Know vapor density and flammable limits of gas.

*Be aware of BLEVE potential.

*Some gas odorants (i.e. ethyl mercaptan) can fade or diminish when filtered through water or soil.

*Prolonged exposure to odorant may prevent you from smelling the leak.

*If on fire, consult technical references for material specific fire fighting procedures.

*Thoroughly ventilate enclosed spaces.

3. Inert Gases and Nonflammable Gases:

Some of these gases such as argon, carbon dioxide, helium, krypton, neon and nitrogen are simple asphyxiants, which displace oxygen in air. Inert gases handled as cryogenic liquids can, if released, generate extremely large volumes of inert gas, which can rapidly displace the oxygen in the atmosphere and cause frostbite. The most common nonflammable gases in transportation are anhydrous ammonia and chlorine. Both of these commodities can be deadly poisons. See Section.11 for Chlorine Emergencies.

a. Useful Contacts:

Airgas	(866) 734-3438	or	(800) 224-7427
Air Products and Chemicals, Inc.	(800) 523-9374	or	(760) 931-9555
Amerigas			(858) 578-6513
Parsons			(858) 278-2050
PraxAir	(800) 225-8247	or	(800) 645-4633	or	(619) 232-7341
Petrolane (aka Amerigas)			(760) 728-1424
Stoody Industrial Welding & Supply Inc.			(619) 234-6750
Westair Gases & Equipment			(619) 239-7571

Always contact manufacturer and owner of tanker if possible.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Is the gas poisonous?

*Is gas lighter or heavier than air? Vapor Density?

*Is asphyxiation a primary concern?

*What is the proper full protective clothing for this gas?

*Consult Handbook of Compressed Gases (compressed Gas Assoc.)

*Consult technical references for specific gas information.

*Stay UPWIND/UPGRADE.

*Initiate evacuations as soon as possible (use DOT Guidebook for distances).

*Consider possibility of pressure vessel explosion. Is relief valve damaged?

*If safety possible, shut off flow of gas.

*Transfer of product should only be done by specialists familiar with and trained in proper procedures and precautions.

4. Cryogenics:

The definition of the term cryogenic material is a substance that has a boiling point ranging from -150 F. down to -459 F. These materials can freeze human tissue, and cause embrittlement of steel, plastics, and rubber. Cryogenic liquids have the added danger of potentially extreme pressure and extreme cold. Examples include liquid oxygen, hydrogen, and nitrogen. Additionally, the gas phase can be an asphyxiant, oxidizer, and flammable. Oxidizer liquids can be explosive on contact with organics (such as asphalt).

Cryogenic gases are transported and stored in what amounts to giant thermos bottles. These containers have relief devises on both the inner and outer bottle. Care should be taken to keep water from contacting the relief devices and surrounding areas because it will immediately freeze and prevent the device from operating. The danger of BLEVE can be present but is unlikely because the outer container shields the inner container. What you want to avoid is an uncontrolled release of cryogenic gas.

a. Useful Contact:

Airgas	(866) 734-3438	or	(800) 224-7427	
Air Liquid America			(858) 578-1900	
Air Products and Chemicals, Inc.	(800) 523-9374	or	(760) 931-9555	
PraxAir	(800) 225-8247	or	(800) 645-4633	or (619) 232-7341

Always contact manufacturer and owner of tanker.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Stay UPWIND/UPGRADE and consider vapor density (will vapor collect in low areas?).

*Initiate evacuations as soon as possible (use DOT Guidebook for distances).

*Extreme pressure and extreme cold. Beware of frostbite; Use cryogenic gloves for handling.

*Consult Handbook of Compressed Gases (Compressed Gas Assoc.)

*Consult technical references for specific gas information.

* If opening valve to relieve pressure, be aware the release of gas may freeze valve in that position.

*Do not attempt to seal a leak unless pressure relief device is functional.

*If safely possible, shut off flow of gas.

*Consider deliberate ignition of gas to produce a controlled burn.

5. Flammable and Combustible Liquids

The uncontrolled burning of even small quantities of flammable and combustible liquids can create a dangerous situation. These are also associated with varying degrees of toxicity. (See Incident Specific Operations sec. 1 if liquid is involved in a Tanker Rollover.)

a. Useful Contacts (Local):

Cal Fish and Game (Daytime- Non Emergency)		(858) 467-4201
Cal Fish and Game (24hr dispatch)	(951) 443-2969 or	(888) 334-2258
Cal Fish and Game OSPR (Spill Response)		(916) 445-9338
Regional Water Quality Control Board		(858) 467-2952
US Coast Guard		(619) 278-7033
DEH-HIRT (daytime)		(858) 505-6673
DEH-HIRT (after-hours: Station M)		(858) 565-5255

Always contact manufacturer and owner of tanker, rail car or pipeline.

b. Action Plan Considerations:

*Remove all sources of ignition.

*Stay UPWIND/UPGRADE

*Begin Site Safety / Incident Action Plan

*Initiate evacuations as soon as possible.

*Consult technical references for specific material information.

*Insure adequate diking has been constructed, and is in place.

*If safely possible, shut off flow of liquid.

*Monitor vapors with CGIs.

*Insure adequate amount and correct type of foam is on hand.

*If transferring, or off-loading of product, ensure proper bonding and grounding.

*Use full protective clothing and SCBAs.

*If product is on fire and flow cannot be stopped, consider letting it burn

6. Flammable Solids:

Any solid material, other than explosives, that is likely to cause fires through friction or retained heat from manufacturing or processing, or that can be ignited readily, and burns vigorously and persistently.

Phosphorus and Sodium are two of the most common flammable solids shipped in highway tankers or railroad tank cars. Other commonly shipped flammable solids include "strike anywhere matches and charcoal".

DOT Hazard Class is 4 is made up of three subcategories:

1. Water Reactive solids
   Those that ignite spontaneously at low temperatures on contact with water (Sodium, Potassium, or lithium Metal)
2. Air Reactive solids
   Those that ignite spontaneously at low temperatures on contact with air (white phosphorus)
3. Flammable solids
   Metals that ignite on contact with heat or spark (Red phosphorus or Magnesium Metal)

Other flammable solids include; Dusts or fine powders suspended in air can cause fires or explosions (metals or organic substances like cellulose, flour, etc.); Films, fibers, and fabrics of low ignition point materials.

a. Useful Contacts:

DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
CHEMTREC	(800) 262-8200

Always contact manufacturer for specific information and MSDS.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Use full protective clothing and SCBAs for all personnel in "hot zone".
Avoid breathing dusts and fumes from burning material.

*Insure adequate extinguishing material on hand.
Many flammable solids are water reactive or will burn under water.
Some powders and dusts produce hydrogen gas when water is applied.

*Consider using DOT guide evacuation distances.

*Remove surrounding sources of ignition, if not on fire.

*Consult MSDS and technical references for specific material information.

*If transferring product ensure proper bonding and grounding.

7. Oxidizers:

Defined as a substance that supports or sustains combustion. Usually contains oxygen that is readily released. The halogens (fluorine, chlorine, bromine, and iodine) are included because they will support combustion. *See hazard specific operations #11 for chlorine.*

The classic oxidizing agent is a substance that does not burn but will support combustion. This is true of only the inorganic oxidizers. Organic oxidizers and organic peroxides will support combustion, and are themselves also flammable.

a. Useful Contacts:

DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
CHEMTREC	(800) 262-8200

Always contact manufacturer for specific information and MSDS.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Initiate evacuations if needed.

*Use full protective clothing and SCBAs.

*Stay UPWIND/UPGRADE

*Insure adequate diking or containment of runoff is in place.

*Remove sources of ignition.

*Consult MSDS and technical references for specific material information.
Determine vapor density and specific gravity of material.

*Monitor vapors.

*If safely possible, stop leak.

*If transferring the product, insure proper bonding and grounding.

***The use of water on large fires of solid oxidizers is seldom effective.**

Special Considerations: (1) Any runoff containing the oxidizer that contaminates a combustible material will promote the ignition of that material. (2) Closed containers may rupture violently if exposed to heat sources. Monitor surrounding containers for heat build-up.

8. Fumigants (Poisons A):

Fumigants mostly commonly encountered are Sulfuryl Fluoride (Vikane), Methyl Bromide (much less common and much more dangerous), and Chlorpicrin (odorant used in tenting operations). These are primarily residential structural fumigants. Vikane is primarily an inhalation hazard (TLV is 5ppm), with little dermal absorption potential. Methyl Bromide is toxic by inhalation and skin absorption. Other examples of fumigants include formaldehyde, sulfur dioxide, hydrogen cyanide, and ethylene oxide (used in lab and hospital settings).

Consult an MSDS and the manufacturer for specific fumigant hazards before emergency operation begin.

a. Useful Contacts:

County Agriculture	(858) 694-8980
EPA – National Pesticide Information Center	(800) 858-7378
Poison Control	(800) 876-4766
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

Local pesticide companies can also be of assistance.

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Approach from UPWIND and upgrade

*Identify fumigant. Check for warning signs posted around structure and on tent.

*Obtain fumigator's name and emergency phone number.

*Consult MSDS and technical references for specific material information. (See Crop Protection Handbook).

*Refer to fumigation policy for rescue criteria.
Only Level "A" entry for Methyl Bromide.
Use structural firefighting equipment with SCBA for VIKANE

*Initiate appropriate evacuations.

*Set up perimeter at least 15 feet outward from tented structure.

*Set up positive pressure ventilation if appropriate, and assure no downwind exposures.

*Keep materials out of sewer and storm drains.

9. Toxic Solids and Liquids (Poison B):

These materials are hazardous by inhalation of the particulates, contact with the body (skin absorption) or by ingestion. The most important factors to consider are quantity, concentration, duration of exposure, particle size or physical state, and affinity for living tissue.

a. Useful Contacts:

Poison Control	(800) 876-4766
EPA – National Pesticide Information Center	(800) 858-7378
County Agriculture	(858) 694-8980
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Set up safe zones.

*Set up decontamination prior to making contact with the material.

*Decontaminate any exposed individuals immediately with large amounts of water.

*Identify product or waste.

*Contain product or waste.

*Consult technical references (MSDS etc.) for proper emergency procedures.

*Be aware of primary hazard (toxicity) as well as any secondary hazards (flammability, reactivity, corrosivity, etc.).

10. Asbestos:

Asbestos is a known carcinogen by the primary route of inhalation. Unless it has been completely sealed into a product, as in asbestos floor tiles, it may break apart into a dust of tiny fibers. Crumbly, powdery asbestos is called friable - this is the type that poses a severe hazard when inhaled or swallowed. Severe asbestos exposure symptom onset may take 10 to 20 years following exposure. Respiratory protection is required any time a responder is around Asbestos.

Firefighters should always wear SCBA's when entering an environment suspected of containing asbestos. It is also acceptable for a cleanup company crew to enter wearing appropriate Tyvek clothing and Air Purifying Respirators with High Efficiency Particulate Absorbent (HEPA) filters. Contaminated personnel and clothing should be rinsed off thoroughly in the field. With the protective clothing laundered prior to reuse. Runoff from the decontamination efforts can be sewered.

An indicator of the possible presence of asbestos in a building is its age. Pre 1976 buildings often contain asbestos insulation on pipes, steel beams, within fire doors, and in the attic insulation.

a. Useful Contacts:

City Environmental Services Asbestos Management	(858) 492-5051
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
Air Pollution Control District	(858) 586-2650
CAL OSHA Enforcement	(619) 767-2280
Housing Programs/Codes Enforcement	See ER Manual
http://www.sdasbestos.org/contact/contact.html	

b. Action Plan Considerations:

*Isolate the area following the DOT Emergency Guidebook recommendations

1) Set up perimeters and zones
2) Deny entry to unauthorized personnel
3) If in open area, approach from UPGRADE and UPWIND while wearing turnouts, and respiratory protection. Tyvek coveralls and Air Purifying Respirator with HEPA filter is approved.
4) In an enclosed area wear SCBA.
5) Begin Site Safety / Incident Action Plan
6) Obtain sample(s) under chain of custody for lab identification.
7) Notify all personnel working in suspected area of potential hazard.
8) *Isolate contaminated personnel and equipment.
9) *Initiate field decontamination.
10) *Make notifications to appropriate departments involved.

*Mitigation concerns:

1) DEH respond and will determine friability of the asbestos containing material.

2) Light water spray can be used to knock down airborne fibers.
3) Covering any exposed (crushed) asbestos will prevent it from becoming airborne. This can include using a salvage cover or dirt.
4) Prevent spread via use of too much water.

*Treating exposed victims:

1) Remove and isolate patient clothing.
2) Set up emergency decon stations - runoff may be sewered.
   i. Ideal decontamination solution is warm water (86 F.) and mild soap.
   ii. Personnel exposed to asbestos should consider minor injury report submission.
   iii. Suggested hospital exam should include chest x-ray and pulmonary functions test.
   iv. Exposed Hazmat (SDFD) personnel should contact toxicologist
3) Have individuals take warm showers after they return to their stations or homes. Be sure they wash their hair and body with soap.

*Obtain samples for laboratory identification, and have analyzed to confirm if material is asbestos or other non-hazardous insulation material. Friable asbestos must be disposed as a hazardous waste. Non-friable asbestos can be disposed to the landfill under a non-hazardous waste manifest. DEH will assist.

Chlorine (gas):

Classified a nonflammable gas and poison. Chlorine is also a strong oxidizer, corrosive, highly toxic, and may be fatal if inhaled. Most combustibles will burn in the presence of chlorine similar to the way they do in oxygen. Chlorine has adverse reactions upon contact with turpentine, ether, ammonia, hydrocarbons, hydrogen, powdered metals, and other reducing materials. Heavier than air - tends to accumulate in low-lying areas.

a. Useful Contacts:

Alvarado Filtration	(619) 668-2017
Miramar Filtration	(619) 527-3156
Otay Filtration	(619) 424-0452
Chlorine Institute	(703) 894-4140
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan.

*Approach any release from UPWIND/UPGRADE.

*Access on-site operators for technical advice on facility

*Estimated volume and location of leak

*Determine wind direction and estimate plume projections

*Evacuations or shelter in place

*Stop or control leak, if this can be done without undue risk.

*Use water spray to disperse vapors and protect personnel.
Attempt to control run-off water from location

*Request Advanced Life Safety (ALS) if Level A entry is anticipated

*Obtain Water Dept. Chlorine Response Plan if appropriate - carried on HZM1 and HZM2.

12. Biohazardous/Trauma Scene Waste:

Trauma Scene waste are biohazardous waste that consists of bodily fluids and other materials deposited to the ground at the scene of a traffic accident, shooting, knifing, or suicide that will require cleaning up at the scene. Biological hazards are disease-causing organisms that can infect unprotected personnel. In addition to infectious organisms found in blood and body fluids, biological hazards may additionally include poisonous plants, insects, and animals. DEH will normally assume responsibility for abandoned medical waste and oversee the cleanup of locations that may potentially contain disease causing organisms.

Common terms used are:

Etiologic agent means a viable microorganism, or its toxin, which may cause human disease.

Infectious Waste contains a type of microorganism, bacteria, mold, parasite, or virus that normally causes, or significantly contributes to the cause of, increased morbidity or mortality of human beings.

Medical Solid waste is generated or produced as a result of diagnosis, treatment, or immunization of humans or animals, testing biological fluids, and is no longer liquid. (Dry materials that may contain dry fluids)

Putrescible waste is material that will decay at room temperature and emits a foul odor.

Sharps waste means any device having acute rigid corners, edges, or protuberances capable of cutting or piercing.

a. Useful Contacts:

DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
Centers for Disease Control	(800) 232-4636
CA Dept. of Public Health, Medical Waste Management Program	(916) 449-5671

b. Action Plan Considerations:

*Contact DEH-HIRT and advise of situation, and discuss options.

*If waste is found on:

Private property; contact the responsible party or property owner for cleanup.

Public Property; local jurisdiction will bear the responsibility for mitigation

*Obtain current list of Trauma Scene Practitioners for possible use at scene. (California Department of Public Health (CDPH) Registered Trauma Scene Mgmt. Practioners
http://www.cdph.ca.gov/certlic/medicalwaste/Pages/TraumaScene.aspx

*Refer any intact red bags and small quantities of used needles to DEH for enforcement

*Determine type of potentially biohazardous waste involved at scene. If a large amount of **putrescible** material is involved – a Trauma Scene Practitioner will likely be required for cleanup.

12. Biohazardous/Trauma Scene Waste: (Continued)

*Begin Site Safety / Incident Action Plan
*Medical Aid
*Wind direction
*Evacuations or shelter in place
*Isolate the area by appropriate method

*Consider shut down of HVAC systems if air borne.

*Remain UPGRADE and UPWIND of hazard.

*Assure all personnel in the area are following Universal Precautions when around the waste.
Avoid contact with any pools of liquid

*Decontamination of area.
Ensure personnel wear suitable protection
DO NOT advise the flushing of the area to unprotected storm drains
DO NOT apply disinfectants to the area, if fluids are not to be removed afterwards

*Begin a list of exposed victims.

*Beware of sharps!

*Any decision to perform the clean up without the utilization of a licensed trauma scene practitioner should be arrived at jointly between SDF&LSS and DEH HIRT representatives in consultation at the scene with the IC.

Acceptable Mitigation methods (after consultation between DEH-HIRT staff and IC)

1) Retrieval of sharps, and placing in approved container for later disposal
2) Collection of miscellaneous medical solid waste in appropriate trash bag, with the proper disposal of the waste to a "SECURE" or locked dumpster.
3) Flushing of the trauma scene (blood on sidewalk) to a bermed area, with the water being retrieved and discharged to the sanitary sewer.
4) Absorbing the trauma scene waste (blood on sidewalk) with sand or other material. Then placing this medical solid waste in an appropriate container for disposal to a "SECURE" or locked dumpster.
5) Contracting with a Registered Trauma Scene Management Practitioner to decontaminate the area, and appropriately dispose of the waste.

13. Radioactive Materials:

Radioactive materials emit one or more of four types of harmful radiation: alpha, beta, gamma and/or neutron.

Gamma and **Neutron** radiation easily passes through clothing and human tissue and can cause serious permanent damage to the body if in high enough concentration.

Alpha and **Beta** radiation are particles that are especially harmful if ingested or inhaled. If radioactive materials are suspected at an incident scene, the area must be monitored. A radiation health physicist and the DEH-HIRT should be called to the scene.

The dose of radiation absorbed by an exposed individual depends on four factors: (1) the type of radiation; (2) the length of exposure (Time); (3) the (Distance) from the source; and (4) the presence of any intervening barriers (Shielding).

Everyone entering an area where a Radiological Dispersal Device may have been detonated needs to be wearing appropriate respiratory protection to minimize the amount of radiological particles that could be inhaled or ingested. To accomplish this, the use of SCBA or APR masks are strongly advised at all times.

Maximizing and increasing the distance between the source and individual is the most effective means of limiting exposure. Conformation of the safest distance can only be accomplished with instrumentation. An exposure rate equal to ambient background reading is considered adequate distance.

Department of Energy (DOE) or Department of Defense (DOD) escorted shipments may also be shipped in combination with explosive and radioactive materials. If encountering an accident involving a DOD or DOE shipment, if there are guards present and they are not incapacitated, follow their recommendations with regard to safety and mitigation of hazards.

a. Useful Contacts:

DEH - Radiation Health Physicist (Ron Yonemitsu)	(858) 505-6657 (desk)
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
County Office of Emergency Service (OES)	(858) 565-3490
California Radiological Health Branch	(916) 327-5106
Nuclear Regulatory Commission (24 hrs.)	(301) 816-5100
Department of Energy	(202) 586-5000

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*If D.O.E. or D.O.D. escorted shipment is involved in fire, stay out of smoke (use SCBA) and if fire cannot be readily brought under control, keep all persons at least a mile away.

13. Radioactive Materials: **(continued)**

*If radiation release was the result of an explosion, request:

Jurisdictional bomb squad to respond
FBI
DEH-HIRT to set up a Radiation Decon and Reception facility in conjunction with the Office of Emergency Services and an EOC activation.

*If mass incident, recommend the dispatch of the MMST, Mass Decon and Mass Casualty vehicles to the incident.

*Monitor area with Geiger counters (Ludlum 2241 with pancake) and survey meters (Victoreen 450B)

Responders on scene should be wearing appropriate dosimetery during response	
State action limit, measured with the Victoreen 450, is	2 mr/hr
Ambient Background readings, measured with the Victoreen 450 is about	15 µr/hr
Ambient Background readings measured with a Geiger counter	200-600 cpm
Maximum Responder exposure for Life saving efforts	50 REM (Whole body)
Radiation worker exposure for one year	5 REM (Whole body)

*Recommend all responders in the area wear appropriate respiratory protection. An APR with CBRN or HEPA P100 rating is preferable due to a particle contamination hazard.

*Establish zones

Edge of Exclusion Zone to be set at 2 mr/hr or lower
Edge of Support Zone to be set where reading is equal to ambient background.
Assist with the placement of a Safe Refuge Area for victims and responders that have not been monitored before wishing to exit the incident or Exclusion Zone.
Consider setting up a Safesite® array around the incident.

*Routine perimeter monitoring is to be performed at prescribed intervals.

*With real time monitoring identify the extent of contamination and map out the contours of the exposure area.

- Refer this map to the IC as soon as possible.

*Identify the isotope as soon as possible using spectra collection equipment (IdentiFINDER and Ortec MicroDetective HPGe) and relay the information to the Incident Commander.

*Initiate Technical Reachback if necessary. Obtain background readings, source readings and check source readings for reachback.

13. Radioactive Materials: **(continued)**

*For a report of a *radiological source on or near coastal or bay waters* in San Diego County, refer to Technical Reachback Procedures - to Adjudicate an Alert & HIRT Quick Reference Card - Radiation Check List.

*If a Neutron source is reported, request law enforcement to secure the area. Obtain background readings, source readings and check source readings for reachback.

*Protective measures:

Evacuation of the population at risk.

If measured radiation levels exceed 1 REM per hour or if structures are compromised

Shelter in Place

Preferred method if measured levels outside structures is under 1 REM per hour. Allow time for an orderly evacuation.

*Provide decon team leader personnel where needed. FRO's can perform the actual decon.

*Dry decon should be used to decontaminate responders and victims with minimal amounts of water being used to avoid spreading contamination *so long as the patients care is not compromised or delayed*

*Monitoring personnel - May involve hand wanding or the use of portal monitors.

1) Personal Dosimeters are to be worn by entry personnel within Exclusion Zone or personnel should stay in groupings to approximate exposure monitoring
2) All personnel that enter the Exclusion Zone perimeter are to be individually surveyed prior to exiting.
3) Assist with Surveillance of First Responders needing to exit the Exclusion Zone
4) Assure all responders to the incident are surveyed for contamination before being allowed to leave the scene.
5) Victims being transported to area hospitals should receive a surface evaluation for contamination.
    1) The hospital should be notified of victims' status upon transport.
    2) DO NOT delay medical treatment if the injury is life threatening and they have not been decontaminated.
    3) Dry decon should be used to decontaminate victims with minimal amounts of water being used to avoid spreading contamination
6) Assist with Surveillance of victims prior to and/or after decontamination

*Activate EMS

1) Advanced Life Support (ALS) if contaminated victims are involved
2) Active County Annex D, to put area hospitals on alert if multiple victims are involved
3) Notify County EMS (Station M to perform) if transporting contaminated or exposed victims to area hospitals.

Radioactive Materials: **(continued)**

4) Alert Tri City Hospital (Approved area trauma center for radiation-contaminated victims. US Navy Hospital Balboa if multiple or military victims)
5) Victim Treatment is not to be withheld if radiation exposure is suspected

*Verify that receiving hospital is equipped/trained to treat contaminated victims.

1) Tri City Hospital - Approved area trauma center for radiation-contaminated victims.
2) US Navy Hospital Balboa - if multiple or military victims

Radiation Alarm at Landfill

Radioactive materials emit one or more of four types of harmful radiation: alpha, beta, gamma and/or neutron. (See page 36 Section 13. Radioactive Materials for details about radiation).

Landfills in this region are equipped with radiation portals to detect illegal disposal of radioactive materials at landfills. Radiation detectors are set at 5 times background. In some cases, the radiation is from a medical source and has a short half-life (Iodine (I)-131, Cesium (Cs)-137, Technetium (Tc)-99). The DEH's Community Health Division (CHD) employs a Senior Health Physicist who should be contacted to determine disposition of all sources of radiation including those that create an alarm at a landfill. There is also a CHD regulator (the Local Enforcement Agency or LEA) responsible for the legal operation of each active and closed landfill. Remember: No two landfills are alike!

a. Useful Contacts:

DEH - Radiation Health Physicist (Ron Yonemitsu)	(858) 505-6657 (desk)
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
Enforcement for all landfills outside City of San Diego	
DEH ask for LEA Supervisor (daytime)	(858) 505-6700
Enforcement for all landfills within City of San Diego	
City Development Services ask for LEA Supervisor	(619) 533-3688
Miramar Landfill	(858) 694-7000
Sycamore Landfill	(619) 562-0530
Otay Landfill	(619) 421-3773
Ramona Landfill	(760) 789-3410
Borrego Landfill	(760) 789-3410

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan.

*Approach UPGRADE/UPWIND

*Responders on scene should be wearing appropriate dosimetery during response

*Contact the landfill, request they isolate the implicated vehicle; request that the driver stand away from the vehicle.

*Obtain a copy of the driver's information and route sheet and a copy of the landfill manager's radiation alarm report.

*Obtain a background reading far from the implicated vehicle.

* Approach the vehicle slowly and in survey mode. Scan the outside of the vehicle in question. Document the highest reading at the surface of the vehicle.

Radiation Alarm at Landfill (continued)

*Establish zones

Edge of Exclusion Zone to be set at 2 mr/hr or lower

Edge of Support Zone to be set where reading is equal to ambient background.

*Identify the isotope as soon as possible using spectra collection equipment (IdentiFINDER or Ortec MicroDetective HPGe).

*Verify rate readings and isotope identification with a second monitor.

*Initiate Technical Reachback if necessary including: background readings, source readings and check-source readings for reachback. If a Neutron source is reported, request law enforcement to secure the area.

*Contact the Senior Health Physicist with background, alarm readings, highest reading outside the vehicle and the identified isotope.

*If burial is approved, the source will be transported to the "face of the landfill" so further less-shielded readings may be obtained if required by the Health Physicist. When allowed by the health physicist, the material should be buried in an approved area of the landfill.

* Re-scan the empty vehicle to see if there is residual contamination.

*Common medical isotopes, symbols and half-life ($T_{1/2}$)

isotope	**symbol**	**$T_{1/2}$**
fluorine-18	^{18}F	109.77 m
gallium-67	^{67}Ga	3.26 d
krypton-81m	^{81m}Kr	13.1 s
rubidium-82	^{82}Rb	1.27 m
technetium-99m	^{99m}Tc	6.01 h
indium-111	^{111}In	2.80 d
iodine-123	^{123}I	13.3 h
xenon-133	^{133}Xe	5.24 d
thallium-201	^{201}Tl	3.04 d
yttrium-90	^{90}Y	2.67 d
iodine-131	^{131}I	8.02 d

STANDARD OPERATING GUIDELINE
RADIOLOGICAL PROTECTION
NUCLEAR TERRORIST EMERGENCY

I. PURPOSE

To develop and maintain a response capability to minimize the threat to public safety caused by a terrorist action involving nuclear weapons or radiological material.

II. BACKGROUND

A. General

Terrorist activities around the world continue to increase in sophistication. More ominously, terrorist attacks appear to be aimed towards maximizing damage and publicity rather than the accomplishment of political goals. When this is combined with the fact that weapons grade nuclear material is becoming increasingly more common, the possibility of a terrorist act involving radiological and lower grade radioactive material nuclear weapons also increases.

B. Scenario

The scenario for a nuclear terrorist threat would most probably begin with the theft of radiological material or a weapon itself from a military base or a Department of Energy (DOE) weapons shipment that would pose a health threat. Federal, state or local governments may be notified of the presence of a nuclear weapon by the terrorist organization.

C. Credibility

The credibility of the threat would depend on knowledge of any previous theft of radiological material or nuclear weapon and any knowledge of the nature of the terrorist group. The most important information required is an assessment of the ability of the terrorists to successfully detonate the weapon or radiological dispersion device (RDD). The FBI, Department of Defense (DoD), DOE, and other federal agencies assisted by state and local law enforcement organizations would perform evaluation of the situation.

III. CONCEPT OF OPERATIONS

A. Activation

1. Upon receipt of information of a radiological threat by a terrorist group, the Emergency Services Coordinator, or his/her designated representative, may proclaim a Local Emergency for the San Diego County Operational Area and activate the Operational Area EOC. Once a Local Emergency is proclaimed the Emergency Services Coordinator may request the declaration of a State of Emergency from the Governor.

2. Upon activation of the Operational Area EOC, radiological resources within the Operational Area will be mobilized to respond to the threat. The State Office of Emergency Services will be notified through the OES Southern Region.

B. Deactivation

The EOC activation can be deactivated at the discretion of the Emergency Services Coordinator or his/her designated representative.

C. Response

1. The nature of the response would depend on:

   a. Nature of the threat. It is possible that the terrorists may threaten to detonate the device if any public protective measures are taken.

   b. Size of the threatened population and the length of time available for evacuation.

   c. Size and type of weapon.

   d. Was the weapon detonated?

2. Protective measures may take two forms:

   a. Evacuation of the population at risk.
   If measured levels exceed 1 REM per hour

   b. Sheltering actions.
   Preferred method if measured levels outside structures is under 1 REM per hour. Allow time for an orderly evacuation.

3. The situation will determine which is the best course of action. If the weapon is located in a heavily populated area and there is little time before the threatened detonation, evacuation may not be possible. In this case, protective, sheltering actions would be called for.

4. Notification must be provided to the area hospitals via Annex D if the operational security of the situation will allow.

D. Effects of Detonation

1. The overall impact of the detonation of a single nuclear or RDD device would be devastating to the immediate area. However, the infrastructure of the Operational Area would remain intact, allowing for rapid rescue and decontamination actions.

2. All responders entering the Exclusion Zone around the blast area are to wear respiratory protection to protect themselves from airborne particles. This can include but is not limited to SCBA, CBRN certified respirators or even N95 rated Air Purifying Respirators.

3. Responders need to take appropriate protective actions by adhering to the principles of Time, Distance and Shielding.

    a. Personal monitors should be used to measure their exposure to the radiation for the duration of the responses using appropriate equipment.
    b. Exposure to radiation should be maintained at less than 10 REM for the duration of the incident unless life saving efforts are underway.
    c. If performing emergency life saving efforts a one time maximum exposure level of 50 REM can be taken used provided the responders are trained, volunteers and not pregnant.

4. Activate the Radiological cache and plan on area to set up portal monitors for responder an/or victim decontamination and surveillance.

5. While the immediate response actions would center around rescue and decontamination operations, equally important will be those activities aimed at preventing contamination of the water or food chain in outlying areas. Long range responses will include long term medical care and screening of survivors and emergency response personnel who have received exposure to radiation.

6. These activities may/will require federal and state resources.

14. Chemical Warfare Agents (CWA):

Four types of CWA include Nerve Agents, Blood Agents, Blister Agents, and Choking Agents. When these agents are involved be aware of terrorists and secondary devices in area. Coordinate activities with law enforcement officers (FBI is the lead agency – but NOT the Incident Commander) in the interest of safety and security.

***Nerve Agents:** GA Tabun, GB Sarin, GD Soman, GF (no name), VX (no name). All of these are heavier than air and can be absorbed through the eyes, lungs, and skin. Major signs and symptoms of exposure include pinpoint pupils, runny nose/salivation, tightness of chest, coughing, jerking and twitching, difficulty breathing, nausea, vomiting, diarrhea, convulsions, and loss of consciousness. (SLUDGE)

***Blood Agents:** AC Hydrogen Cyanide, CK Cyanogen Chloride. AC is lighter than air and CK is heavier than air. Signs and symptoms of inhalation exposure include strong stimulated breathing, headaches, loss of consciousness, and convulsions. Individuals have a normal pupil size and no secretions. CK exposure may cause burning/stinging on contact with eyes, exposed skin or respiratory tract.

***Blister Agents:** HD Sulfur Mustard (delayed), HN Nitrogen Mustard (delayed), L Lewisite (immediate effect). All are heavier than air and can be absorbed through eyes/lungs/skin. Signs and symptoms of exposure include reddening of eyes/gritty irritation, reddening of skin, blisters, sore throat, nausea, and vomiting, Signs and symptoms may not present until 2-24 hours later.

***Choking Agents:** CG Phosgene, PS Chloropicrin, CL Chlorine. All are heavier than air. Signs and symptoms include mild irritation of eyes, nose, throat (immediate), shortness of breath, coughing, frothy secretions 2-24 hours later, nausea/vomiting, and pulmonary edema.

a. Useful Contacts & Notifications to be made (time permitting):

FBI	(858) 565-1255
HIRT-SDFD (Dispatch)	(858) 974-9891
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
County Office of Emergency Services (OES)	(858) 565-3490
County Emergency Medical Services	(619) 285-6429
Metropolitan Medical Strike Team (MMST-Stn M)	(858) 565-5255
Poison Control Center	(800) 876-4766
Disaster Medical Response Team (DMRT)	Available through FBI

b. Action Plan Considerations:

*Begin site Safety / Incident Action Plan

REMEMBER THIS IS A CRIME SCENE

*Isolate the area by establishing an Exclusion, Contamination Reduction, and Support zone.
Use the Emergency Response Guidebook as a guidance document for distance selection. (WMD agents are listed in the 2008 ERG)

*Consider possibility of secondary devises.

14. Chemical Warfare Agents (CWA): **(continued)**

*Advise responding agencies to park UPWIND/UPGRADE and distant until properly protected.

*Activate Annex D to alert area hospitals

*Consider decon options for personnel.

*Determine level of PPE for all personnel at scene.

Responders into the Contamination reduction Zone should wear chemically resistant coveralls, gloves, and boots. Safety glasses or face shields are to be used to protect the eyes from incidental splash.

*Set up decontamination prior to making entry or contact with any material.

Decon under these conditions may be limited at first to converging or opposing streams from the engines on scene.

**Identify the agent. ASAP

1) Law enforcement may be able to assist with intelligence info from area.
2) Gather as much information as possible from all parties and witnesses involved.
3) Signs and symptoms of the victims may be your only indicators
4) Look for other indictors such as; suspicious packages, devices, or lack of insects.
5) Look for signs of chemical reactions; like heat build-up, visible vapors, fizzing, or pressurization.
6) Use spotting scope, especially if explosives or shock sensitive materials are suspected. In cases where you suspect explosives or shock sensitive materials don't touch! Call the bomb squad.
7) Level A entry into Exclusion Zone to retrieve sample for analysis and evidence preservation.
8) Start up all analytical instruments to be used for testing at scene.
9) Monitor near ground as most CWA (except AC) are heavier than air.

*Decontaminate any ambulatory exposed individuals immediately with **LARGE** amounts of water.

Decon run off should be directed so that it doesn't affect emergency responders or the general public.

*Monitor the atmosphere following your normal procedures for flammability, toxicity, low oxygen content, radioactivity, etc with available instrumentation.

*Triage/decontaminate/treat victims.

Until agent is identified, Responders are to wear Full PPE, Nitrile medical aid gloves, and SCBA to be worn when handling victims prior to their being decontaminated.

14. Chemical Warfare Agents (CWA): **(continued)**

*Request more resources - incident is likely to escalate.

Request:

1) Law enforcement support – FBI to be lead agency (not IC)
2) SWAT/SED support
3) Call back HIRT personnel to assist with the response and bring additional equipment (SafeSites®).
4) MMST with appropriate amount of medications and spare PPE.
5) Open County Annex D to alert area hospitals of potential mass casualty victims that may self refer to hospitals.

Additional Considerations:
This information is being discussed here to provide you with a more complete knowledge base to assist you in making an informed hazard/risk assessment during such incidents. It is not intended to suggest an endorsement of the 3/30 Guideline as any form of policy statement.

- The U.S. Army Soldier and Biological Chemical Command (SBCCOM) published a study entitled "Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident", dated June 2003. This report provides operational restrictions, which limit potential exposure times for firefighters who are wearing FFPE/SCBA, while they perform initial reconnaissance of the scene or quick rescue of living victims. This report also describes the expected level of exposure and the effects that firefighters may experience as a result of these operations. It is commonly referred to as the "3/30 Guideline

- Firefighters using FFPE/SCBA entering a nerve agent vapor environment WITHOUT KNOWN or minimal numbers of LIVE VICTIMS should limit their exposure to three minutes for recon.
- Firefighters using FFPE/SCBA entering a nerve agent vapor environment to perform rescue of KNOWN LIVE VICTIMS can operate for up to 30 minutes with minimal risks associated with nerve agent exposure.
- If a decision is made to perform reconnaissance or hasty rescue of ambulatory victims – adhere to the strict time lines referenced above.
- Multiple entries are not advisable

Operational Considerations during WMD Incidents:
Fire Department Guidance Document

Weapons of Mass Destruction (WMD) incidents for all intents are Hazmat responses where the intent was a deliberate release of agent and to do harm to others. Personnel assigned to suppression apparatus will likely encounter these events with little or no warning. In accordance with Cal OSHA regulations pertaining to hazardous waste operations and emergency response, these personnel have been trained and equipped to respond to such incidents "for the purpose of protecting nearby persons, the environment, or property from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release." When applying this definition to an incident that potentially involves mass casualties and the immediate need for mass decontamination, the unexpected possibility for direct contact with the harmful agent(s) is high.

TACTICAL CONSIDERATIONS:

With all Hazmat calls - assume nothing. First responders should safely, Isolate, deny entry, and make notifications (SIN). Stay out of the spill or plume while getting within viewing distance. Gather as much information as possible from witnesses before approaching the scene. Approach the incident from UPGRADE and UPWIND. When approaching, wear appropriate personal protective equipment (PPE) and SCBAs. If you determine you do not have the proper level of PPE for the incident then wait for the HIRT and MMST and have them make the subsequent entries into the incident location

Procedure for Decontaminating WMD PPE

1. If wearing boot covers – remove them at this point unless they are covering leather shoes
2. Remove Outer Gloves – turning them inside out as they are removed
3. Remove SCBA back pack leaving individual on air
    a. Do not touch the mask
4. Wash suit assembly to remove gross contamination
5. Rinse suit assembly to remove soap and residual contamination
6. If wearing a suit into a contaminated environment it may be necessary to cut the suit away from the mask to remove the hood
7. Remove Suit by turning it inside out as it is pulled down to boot tops
8. Grab back of boots and suit, then have individual step out of boots
9. Remove person from supplied air unit – if Level B
10. Have individual Remove own mask while still wearing medical aide gloves
11. Bag Mask separately from SCBA for later decontamination
12. Remove medical aide gloves
13. Go thru appropriate REHAB procedures

PPE Considerations during WMD Incidents:
Fire Department Guidance Document

Weapons of Mass Destruction (WMD) incidents for all intents are Hazmat responses where the intent was a deliberate release and to do harm. Following initial standard "First Responder Operations" (FRO) level Hazmat protocols is acceptable. Personnel assigned to suppression apparatus will likely encounter these events with little or no warning. In accordance with Cal OSHA regulations pertaining to hazardous waste operations and emergency response, these personnel have been trained and equipped to respond to such incidents "for the purpose of protecting nearby persons, the environment, or property from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release." Applying this definition to an incident that potentially involves mass casualties and the immediate need for mass decontamination, the possibility for direct contact with the harmful agent(s) is high.

This may be due to several factors including, but not limited to, the following:

- The rapid approach of contaminated victims to your location upon initial arrival at scene,
- A delay in recognition of the threat leading to an inadvertent commitment into a contaminated area, and/or
- A conscious decision to accept the risk of possible exposure in attempting to perform quick rescues of ambulatory victims, or rapid reconnaissance to determine the scope of the emergency.

Our first and best line of defense during a WMD or Hazmat incident is being able to recognize risk factors thereby enabling first responders to determine what protective measures to take. The next level of protection comes from applying the basic principles of time, distance and shielding that firefighters are taught during their initial Hazmat FRO Training. PPE is part of our **SHIELDING**.

The PPE normally available to FRO personnel is limited to a maximum of full turnouts (also referred to as "firefighter protective ensembles", or FFPE) worn with an SCBA and hood, with the additional option of an air purifying respirator (APR) for extended operations or when continuous/immediate availability of supplied air is not feasible and the use of APRs is allowable. Studies conducted cooperatively by the military and several fire agencies have demonstrated that direct exposure to simulant chemical warfare agent vapors while wearing FFPE/SCBA suggest limited protection is provided. The U.S. Army Soldier and Biological Chemical Command (SBCCOM) have published a study entitled "Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident", dated June 2003. This report provides operational restrictions, which limit potential exposure times for firefighters who are wearing FFPE/SCBA, while they perform initial reconnaissance of the scene or quick rescue of **living** victims. This report also describes the expected level of exposure and the effects that firefighters may experience as a result of these operations. It is commonly referred to as the "3/30 Guideline", as it suggests the following:

- Firefighters using FFPE/SCBA entering a nerve agent vapor environment WITHOUT KNOWN or minimal numbers of LIVE VICTIMS should limit their exposure to three minutes for recon.

- Firefighters using FFPE/SCBA entering a nerve agent vapor environment to perform rescue of KNOWN LIVE VICTIMS can operate for up to 30 minutes with minimal risks associated with nerve agent exposure.
- If a decision is made to perform reconnaissance or hasty rescue of ambulatory victims – adhere to the strict time lines referenced above.
- Multiple entries are not advisable

This information is being discussed here to provide you with a more complete knowledge base to assist you in making an informed hazard/risk assessment during such incidents. It is not intended to suggest an endorsement of the 3/30 Guideline as any form of policy statement. However, since most Fire Personnel will respond in FFPE/SCBA to an unknown "HAZMAT" environment they need to be aware that there is some protection provided by their current PPE used in the Operational Area. Working under these operational restrictions described above, **the risk is that HALF of firefighters may possibly experience threshold effects from chemical nerve agent exposure**.

Consistent with training and departmental policies already provided when encountering a WMD incident:

- Do what you can on the first entry – leaving if necessary
- Dispatch HIRT and the MMST to the incident
- Set-up to manage the mass decontamination of ambulatory victims (high volume, moderate pressure water deluge).
- Following departmental procedures, this Decon should be established away from the immediate area of victim egress and with the runoff water being directed away from rescue personnel and victims if at all possible (affording the protection factor of **DISTANCE**).
    - The immediate containment of runoff while saving lives is not the highest priority for FROs.
    - FROs should restrict their direct contact with victims until after these people have been decontaminated.

Under these circumstances, the existing policy of using FFPE/SCBA is still considered to be an acceptable risk

- Any response personnel that may have entered the HOT zone are to be considered potentially contaminated – Upon leaving the contaminated area quickly go thru decontaminated immediately. Your FFPE may need to be disposed of after evaluation.
- The risk of direct contact with victims who have not yet been decontaminated is considered to be a hazard. Remain in FFPE until all victims have been evaluated and the seen stabilized.

Respiratory Protection – Modification

Anytime FFPE is being worn as a Level C ensemble which is wearing an APR instead of an SCBA, the air quality must have been evaluated first. Contact the HIRT team to perform this function.

- Level C may be not appropriate in any zone where multiple victims may be deceased (this is an indication that your environment exceeds the Immediately Dangerous To Life and Health (IDLH) levels that are not to be exceeded when wearing an APR).

No single clothing material protects against all hazards for prolonged periods of time, so selection must be based on the work environment as well as the chemicals that may be present. The atmosphere must be monitored for: flammability, oxygen content, toxicity, radioactivity, physical hazards, electrical hazards, noise, and biological hazards.

The barrier material of the suit that has been chosen for use by the San Diego Operational Area, in the Hot Zone resists permeation, degradation, and penetration by the WMD chemicals of concern, for emergency responder required work cycles. In all instances, PPE should be selected by evaluating its performance characteristics against the requirements and limitations imposed by the response activity. The materials chosen have been evaluated to provide the best level of protection for WMD agents of concern.

Final Considerations:

- Establish a routine - and practice it
- WMD PPE should be examined monthly for its integrity once removed from the sealed package.
    - Damaged or otherwise unfit equipment is to be replaced immediately.
- Get assistance if needed
- When putting on the suit, make sure your movements are not restricted nor the suit is too large to safely wear.
    - Air should be “burped” from the garment before entering the work zone
- During use check for any malfunctions or problems with the ensembles such as holes or tears

DONNING WMD ENSEMBLE PROCEDURE

- Step into legs of suit
- Put on Chemical Resistant boots – if available
    - Or realize you could destroy your other shoes or boots
- Put on white inner cotton gloves
- Put arms through suit
- Put on APR or SCBA Mask
- Open a NEW CBRN canister by tearing open the foil packet and connect to mask
- Perform Neg. and Pos. facepiece seal test
- Put on second pair of gloves over gloves attached to ensemble
- Raise hood over head – Assure face mask to suit seal.
- Secure all suit fasteners (zipper and velcrow flap)
- Put on SCBA if being used
- Go on air (if level B) when entering Exclusion zone

PPE Considerations during WMD Incidents: SWAT/Tactical Medic Guidance Document

PURPOSE:

Weapons of Mass Destruction (WMD) personal protective equipment is being provided to protect personnel who are trained to the "First Responder Operations" (FRO) level, have more specialized training in WMD response and may be part of an initial response to any incident involving the release of a radiological, chemical or biological agent. These personnel will likely have been provided with a degree of warning that will allow them to use specialized PPE being purchased by the region. In accordance with Cal OSHA regulations pertaining to hazardous waste operations and emergency response, these personnel have been trained and equipped to respond to such incidents. They are not trained like the HIRT team to respond to actually try to stop the release. These individuals will be equipped with PPE in compliance with NFPA 1994 Class 3 ensemble (XRT or MIRT suits) requirements or higher (Class 2 Multi Threat ensemble).

These NFPA 1994 Class 3 compliant ensembles are being made available to SWAT/SED, EOD, Mobile Field Force, Tactical Medics and HIRT personnel to fill a gap identified with full turnouts (also referred to as "firefighter protective ensembles", or FFPE) and SCBA, with the additional option of an air purifying respirator (APR) for extended operations or when continuous/immediate availability of supplied air is not feasible and the use of APRs is allowable.

NFPA 1994 Class 3 ensembles will allow the tactical entry teams to enter a HOT or WARM zone once testing indicates the air borne contaminate criteria is met by the HIRT team for extended periods of time **(up to 8hrs**). The ensemble suits are one piece construction with integrated gloves, booties, specific face-piece seals and are of a breathable fabric. The permeation, penetration and degradation tests conducted with the WMD agents allow for use in hostile environments for extended periods of time while wearing an Air Purifying Respirator (below IDLH levels). If the suit being used is fitted for the SCBA mask being used it will act as a Level B (above IDLH) ensemble also.

Limitations:

1. Must be used with specified brands of APR. The San Diego regional standard is the MSA Millenium Mask however other face mask seals have been tested with these suits. Blauer WZ9435B ensemble can use - MSA Millenium, Scott M120, Scott AV3000 SureSeal
2. Most WMD agents are rated at 8 hrs (480 minutes) of protection however responders should always consult the reference material before use
3. This ensemble is designed to use with a camelback style canteen for extended stay times in the environment and hydration is recommended.
4. The ensemble is made of a special breathable (one way) fabric that **minimizes** heat buildup and will wick moisture out of the suit.
5. If used in a contaminated environment the suit must be decontaminated and disposed of properly – not reused. Consult HIRT before disposal.
6. If no contamination is encountered the ensemble may be used up to 5 time (8 hrs total) with proper storage in between uses
7. The XRT ensemble is NOT fire rated and should not be worn around open flames
8. **Shelf life is 10 years**

The primary purpose of this WMD PPE is to provide “splash” protection, combined with the appropriate level of respiratory protection, for response to a known or potential WMD incident. Anytime this PPE is being worn as a Level C ensemble (wearing an APR instead of an SCBA) the air quality must have been evaluated first. Level C may not be appropriate in any zone where multiple victims may be deceased (this is an indication that your environment exceeds the Immediately Dangerous To Life and Health (IDLH) levels. And APR’s are not to be used if you exceed an IDLH. When exiting a contaminated environment your WMD PPE will need to be isolated and possibly discarded after evaluation

TACTICAL CONSIDERATIONS:

With all Hazmat calls - assume nothing.

- Gather as much information as possible from witnesses before approaching the scene.
- Request the HIRT team be dispatched to your incident
- Begin Site Safety / Incident Action Plan
- Safely, Isolate, deny entry, and make notifications (SIN).
- Stay out of the spill or plume while getting within viewing distance.
- Don’t handle any spilled material unless properly equipped to do so
- Approach the incident from UPGRADE and UPWIND.

Observations:

1) Look for signs of chemical reactions; like heat build-up, visible vapors, fizzing, or pressurization.
2) Observe symptoms of victims
3) Multiple victims – consider the activation of Annex D
4) In cases where you suspect explosives or shock sensitive materials don't touch! Call the bomb squad.

A. Useful Contacts:

Through normal dispatch procedures contact HIRT as soon as the incident is recognized and request an immediate response.

HIRT – SDFD	(858) 974-9891 SD Dispatch
HIRT – HMD (daytime)	(858) 505-6673
HIRT – HMD (After hours)	(858) 565-5255

Responsible party or company

PPE Considerations during WMD Incidents:
SWAT/Tactical Medic Guidance Document
Blauer WZ9435B XRT Ensemble
DONNING, DOFFING AND STORAGE

PURPOSE:

Weapons of Mass Destruction (WMD) personal protective equipment is being provided to protect personnel who are trained to the "First Responder Operations" (FRO) level, have more specialized training in WMD response and may be part of an initial response to any incident involving the release of a radiological, chemical or biological agent. These personnel will likely have been provided with a degree of warning that will allow them to use specialized PPE being purchased by the region. In accordance with Cal OSHA regulations pertaining to hazardous waste operations and emergency response, these personnel have been trained and equipped to respond to such incidents. They are not trained like the HIRT team to respond to actually try to stop the release. These individuals will be equipped with PPE in compliance with NFPA 1994 Class 3 ensemble (XRT or MIRT suits) requirements or higher (Class 2 Multi Threat ensemble).

DONNING PROCEDURE:

1. Remove duty equipment from waist and person that could damage the ensemble
2. Wear something under this ensemble – preferably of cotton
3. Sit down and slide feet into the leg/integrated socks
4. Put on your boots and adjust to fit (These may be disposed of if contaminated in a real incident so be aware of that.
5. Put on your APR mask and adjust for a snug fit.
6. Stand up and put on the upper portion of the suit
7. Pull the hood over your head (carefully) and adjust the face gasket while looking up starting at the bottom of the mask under the chin.
8. Have a partner check to be sure the seal is smooth and overlaps the mask.
9. Close the zipper and cover with the flap
10. If wearing a PAPR or SCBA, put that on at this time and turn it on.
11. Put on any of your law enforcement belts/equipment at this time.

DOFFING PROCEDURE

1. Do not attempt to remove any of this equipment until you have gone thru completed decontamination
2. Decontaminate the ensemble – you will need help to do this properly
3. Once decontaminated – Remove the PAPR or SCBA unit keeping the mask on
4. Begin by unzipping the front zipper
5. Remove the top portion – with the gloves
6. Remove the duty boots
7. Remove the lower portion of the ensemble

8. Remove the face mask
9. In an extreme instance where the suit was badly contaminated it may be best to (with HELP) cut the suit off of the responder after decontamination.

PROPER USE

1. DO NOT reuse if exposed to actual chemicals or WMD agents – Contact HIRT before disposal
2. DO NOT apply additional letter or markings to the ensemble. This could damage the protective nature of the fabric.
3. There are locations on the suit designed to attach with velcrow or other means any designators needed.
4. This suit will not protect the wearer from a flash fire. The face seal could burn.

STORAGE PROCEDURES

1. Once removed from the vacuum sealed storage bag the ensemble should be inspected at least one time per year – even if not used
2. Once removed from the vacuum sealed storage bag it is important to properly fold it prior to placing in a protective bag for storage
3. Lay suit on its back
4. Fold sleeves over the chest
5. Fold hood over the sleeves
6. Fold legs in half, and then half again
7. Press air out to flatten
8. Insert the suit into a protective storage bag
9. Optional: Place mask, boots and user documentation in the bag
10. Close the zipper to seal the bag
11. Store suit away from sharp objects

12. Avoid long term cycles of heating and cooling such as inside a vehicle trunk, this can shorten the useful life of the shell material. (the manufacturer does not spell out what cycle extremes are)
13. Never store in sunlight , in full fluorescent lighting, near heat lamps or other heat sources

14. DO NOT attempt to repair a damaged ensemble
15. DO NOT reuse a suit worn for more than 8 cumulative hours

Corrosives:

A corrosive is any material that will attack and destroy, by chemical action, any living tissue with which it comes in contact. These are either acids or bases.

***Acids:** The two terms concentration (%) and strength (pH) are not related to each other but are often inaccurately used interchangeably. You may have a low concentration of a strong acid, or a high concentration of a weak acid and the chemical activity (corrosiveness) of the two could be equal. Generally, when you have equal concentrations of two acids, one of which is strong and the other weak, the strong acid will be more corrosive, since it will be more active - chemically. Acids may also be explosive, oxidizers, water reactive, toxic and/or polymerize readily, Acids are rated on the free dissociation of the hydrogen ion (H+) in their structures.

***Bases:** Chemically opposite of acids. Bases are for the most part hydroxides, those ionic compounds that contain the hydroxide ion (OH-). Soda ash will not neutralize bases, but require the use of Citric Acid. Use MSDS and technical references for specifics.

There are no set guidelines for handling all corrosives when they have been released from their containers. Always be guided by technical reference materials. The best way to consider handling corrosives is to break them into inorganic acids, organic acids, bases, and other corrosives.

a. Useful Contacts:

CHEMTREC	(800) 262-8200
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan

*Stay UPWIND/UPGRADE from spill.

*Establish zones.

*Are there fumes? Determine if evacuations are necessary.

*Medical concerns and first aid

1) The onset of severe respiratory distress from breathing fumes may be delayed several hours or until the next day.
2) Victims exposed to corrosives should be flushed with copious quantities of water, and have any contaminated clothing removed prior to transport.
3) When in doubt, decon an individual.
4) Applying neutralizing materials to individuals should only be done at the recommendation of a physician.

*Identify and obtain technical info about specific corrosive material.

*Use PPE specific to chemical.

15. Corrosives: **(continued)**

*Consider toxicity, explosive/fire potential as well as corrosiveness.

*Chemical Compatibility with outside container

- Acids cannot be stored in Metal containers unless the metal has been tested to confirm its chemical compatibility. Or an appropriate liner has been installed in the drum.(i.e., Nitric Acid is stored in Stainless Steel, glass or some plastics)
- Bases will react with some metals. (i.e., Hydroxide compounds will react with Aluminum but not Iron)

*Containment methods can include:

1) Absorption with chemically compatible material prior to containerizing in an approved DOT drum for disposal.
2) Diking liquid to be pumped or excavated at a later time
3) Covering liquid with a chemically compatible material to prevent it from volatilizing to the air.

*Control methods can include and are used in conjunction with appropriate technical reference guidance.

1) Transferring (pouring or pumping) contents of a damaged container to a chemically compatible, stable one.
2) Lab packing smaller individual containers in a chemically compatible strong outside container.
3) Neutralize spilled corrosives with an appropriate material using small additions and/or diluting the material in water first.
   i. Most Acids can be neutralized with Sodium Carbonate (Soda Ash)
   ii. Most Bases can be neutralized with Citric Acid powder
   iii. Commercially available spill control pillows are available. The acid pads on DEH-HIRT vehicles are pink.
4) Diluting an acid or a base spill does not change their chemical composition, only changes its concentration. Dilution should only be employed if it is combined with an immediate public health concern, in excess of the environmental damage that dilution can cause.

*Small quantities of neutralized corrosive liquid can be sewered. Confirmation must be obtained from the local sewer agency prior to using this option.

*One gallon of concentrated acid can take 100 lbs of soda ash to neutralize.

*Adding water to acid may cause release of heat, flammable vapors and acid fumes or spattering.

16. Unknown Materials:

With all Hazmat calls - assume nothing. Gather as much information as possible from witnesses and the Potentially Responsible Party before approaching the scene. First responders should safely, Isolate, deny entry, and make notifications (SIN). Stay out of the spill or plume while getting within viewing distance. Approach the incident from UPGRADE and UPWIND. When approaching, wear appropriate personal protective equipment (PPE) and SCBA's.

Observations:

- Look for signs of chemical reactions; like heat build-up, visible vapors, fizzing, or pressurization.
- Consider opening containers with the remote drum opener,
- In cases where you suspect explosives or shock sensitive materials don't touch! Call the bomb squad.

a. Useful Contacts:

DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
CHEMTREC	(800) 262-8200

Responsible party or company

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan
*Isolate the area by establishing an Exclusion, Contamination Reduction, and Support zone.
Use the Emergency Response Guidebook as a guidance document for distance selection.
*Set up decontamination prior to making entry or contact with any material.
*Decontaminate any exposed individuals immediately with large amounts of water.
*Identify product or waste.
Look for any indictors; suspicious packages, devices, lack of insects, or victims.
Gather as much information as possible from all parties and witnesses involved.
Use spotting scope, especially if explosives or shock sensitive materials are suspected.
*Determine who is the responsible party or organization.
*Monitor the atmosphere surrounding containers for flammability, toxicity, low oxygen content, radioactivity, etc.
*Contain product or waste.
*Consult technical references (MSDS, computer data bases, etc.) for proper emergency procedures.
Be aware of the primary hazards listed, as well as, any secondary hazards (toxicity, flammability, reactivity, corrosivity, etc.).
*Use appropriate PPE, including SCBA for obtaining a small sample of material.
*Use established safe HazCat techniques to determine a general hazard class.
*Assist responsible party in contacting appropriate cleanup contractors.

17. Sampling / Field Chemical Analysis Operation For Unknowns:

Sampling and Hazardous Categorization (Haz-Catting) can be one of the most hazardous activities to HIRT members because it often involves direct contact with unidentified substances.

Prior to collecting samples a sampling plan should be developed:
Observations:

- Use binoculars / spotting scope
- Search container for any names or numbers.
- Identify container material (poly, steel, etc.) and any special features (i.e. pressure relief devise, double wall, etc.).
- Very reactive chemicals may provide warnings (such as bulging lids, obvious fuming, smoking, or fizzing). The Inferred thermometer should be used to measure the latent heat capacity of the drums to be sampled, prior to opening them.

Establishing a sampling plan:

1) Determine number, volume, location of samples to be taken.
2) Select appropriate sampling device(s) and containers: Coliwasa tubes, lab scoops, turkey basters, pipettes.

* Select appropriate PPE. SCBA and Level B splash suit are minimum protection for sampling.

Sampling Techniques:
* Consider using remote drum opener.
* Do not lean over other containers to reach container being sampled.
* Cover container tops with plastic sheeting or drum liner for splash protection before removing lids or bungs.
* Monitor exterior of container for flammability (CGI), prior to opening container.
* If explosive peroxides are suspected perform peroxide test around the containers openings.
Crystals may not always be visible.

Hazard Categorization Procedure:
Successful identification of unknown materials requires knowledge of what to look for, and a sense of what to expect. One of the most important skills for the HazCat user to develop is the ability to think in terms of chemical categories and probabilities. At actual incidents only experienced HazCat users should perform the tests.

The HazCat user should learn to recognize:
* The chemicals most likely to be spilled.
* Identify the four basic hazard classes; Toxic, Reactive, Ignitable, and Corrosive.
* The difference between organic and inorganic substances.
* Chemicals of special concern to the responder.
* Air monitoring equipment and chemical detection equipment should also be used in conjunction with HazCat testing to identify an unknown substance.
* Air monitoring equipment and chemical detection equipment should also be used in conjunction with HazCat testing to identify an unknown substance.

18. Abandoned Waste (non-RCRA) Automotive products:

Waste Oil: Any Petroleum based product used for lubrication. These abandoned containers are usually accompanied by materials, also abandoned, which may indicate origin. Uncontaminated waste oil can be transferred by the DEH, SDFD ERT, or the local jurisdiction, to their automotive repair facility and can be added to established bulk waste oil disposal tanks. If in the course of investigating an unknown container, the containers do not seem to contain automotive products, a full Hazmat response will be requested.

a. Useful Contacts:

SDFD Repair Facility (storeroom 43)	(858) 573-1353
City Environmental Services	(858) 492-5055
Household Hazardous Waste Hotline	(877) 713-2784
Storm Drain enforcement – City of San Diego	(619) 235-1000
Storm Water hotline – Unincorporated Area	(888) 846-0800
Cal Trans (for freeways)	(858) 467-3085
Cal Fish and Game (Daytime)	(858) 467-4201
Cal Fish and Game (24hr dispatch) (951) 443-2969 or	(888) 334-2258
US Coast Guard	(619) 278-7033
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

1) Is the container on private property?
   i. If so it is not your problem, but you must contact the owner and inform them they are responsible for the cleanup and disposal of the waste.
   ii. If it is abandoned on City property it can either be added to established Repair Facility waste stream or disposed of through a cleanup contractor. The City will have to incur the cost.
2) If the material tests positive for flammability or halogens,
   i. It cannot be added to bulk waste oil recycling at the Fire Department Repair Facility.
   ii. It must be disposed of by contracting with an approved cleanup contractor.
3) Determine if there is stratification of different materials in the container.
   i. If container has a layer of water, siphon it off.
   ii. Stain out debris and consolidate into covered secure containers before taking oil to repair facility.
4) A limited number of oil filters may also be added to the Repair Facility waste stream.
5) All other debris associated with the response must be "California Dry" to dispose at the landfill.

*Keep records to document proper disposal.

19. Abandoned Waste (non-RCRA) Paints:

Abandoned Paints: Any abandoned paint/paint waste, latex, oil based, lacquer, acrylic, epoxy's, stains, shellacs, enamels, reducers, sealers, surface treatments, covering liquids, sizers, etc.

a. Useful Contacts:

SDFD Repair Facility (storeroom 43)	(858) 573-1353
City Environmental Services	(858) 492-5055
Household Hazardous Waste Hotline	(877) 713-2784
Storm Drain enforcement – City of San Diego	(619) 235-1000
Storm Water hotline – Unincorporated Area	(888) 846-0800
Cal Trans (for freeways)	(858) 467-3085
Cal Fish and Game (Daytime)	(858) 467-4201
Cal Fish and Game (24hr dispatch) (951) 443-2969 or	(888) 334-2258
US Coast Guard	(619) 278-7033
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

1) Is it on private property?
   i. If so contact the owner and inform them they are responsible for the cleanup and disposal of the waste.
   ii. If it is abandoned on City property it can be disposed of through a cleanup contractor. The city will have to incur the cost.
2) Determine if flammable or non-flammable.
3) Determine product types. Contact a waste cleanup contractor for assistance in determining most cost effective way of disposal.
4) Determine if there is stratification of different materials in the container.
5) If container has a layer of water, siphon it off.
6) Dispose of waste through an approved cleanup company.
   i. If more than response team can handle, dispatch a cleanup company to the site.
   ii. Package appropriately for transport to approved waste storage location.
7) Shipping papers and waste analysis form must be completed.

*Keep records to document proper disposal.

20. Abandoned Waste (non-RCRA) Car Batteries:

Car Batteries: Any lead acid battery abandoned.

a. Useful Contacts:

SDFD Repair Facility (storeroom 43)	(858) 573-1353
City Environmental Services	(858) 492-5055
Household Hazardous Waste Hotline	(877) 713-2784
Storm Drain enforcement – City of San Diego	(619) 235-1000
Storm Water hotline – Unincorporated Area	(888) 846-0800
Cal Trans (for freeways)	(858) 467-3085
Cal Fish and Game (Daytime)	(858) 467-4201
Cal Fish and Game (24hr dispatch) (951) 443-2969 or	(888) 334-2258
US Coast Guard	(619) 278-7033
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

1) Is the battery on private property?
    a. If so, it is not your problem. Find property owner for disposal/recycling
    b. If on City property, transport to approved repair facility for recycling
2) Is battery intact and dry?
    a. If dry transport to repair facility.
    b. If not dry put in drum liner - bucket optional.
    c. Battery recyclers will take them wet if contained. (Neutralization optional)

*Keep records to document proper disposal.

21. Abandoned Waste (non-RCRA) Cooking oil and grease:

Cooking oil and grease. There are two types encountered in the field; 1) Fats, lards, meats, frying debris mixed in cooking oil - more often rancid.. 2) Trap grease which is high in acid content and often contaminated with rags, grit, dirt, and assorted wastes found in a sink or drain.

a. Useful Contacts:

City Environmental Services	(858) 492-5055
Household Hazardous Waste Hotline	(877) 713-2784
Storm Drain enforcement – City of San Diego	(619) 235-1000
Storm Water hotline – Unincorporated Area	(888) 846-0800
Cal Trans (for freeways)	(619) 688-6670
Cal Fish and Game (Daytime)	(858) 467-4201
Cal Fish and Game (24hr dispatch) (951) 443-2969 or	(888) 334-2258
US Coast Guard	(619) 278-7033
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
Darling International Inc. 8096 Miramar Rd. San Diego Ca. 92126	(858) 566-8600

b. Action Plan Considerations:

1) Is the container on private property?
    i. If so it is not your problem, but
        1. You must contact the owner and inform them they are responsible for the cleanup and disposal of the waste.
        2. Notify the DEH that the container of cooking grease has been abandoned on private property
        3. Notify the appropriate stormwater program, because the container may show up in someone's trash later.
    ii. If it is abandoned on City property it can be disposed of through a cleanup contractor (Darling International Inc.).
    iii. Overpack the container if it is leaking or unsound.
2) Call Darling International Inc. with description of contents.
    i. There is a $15.00 pickup charge, if Darling International has to respond to the area (normal working hours) and take the waste
    ii. There is no charge (This is a courtesy to response agencies that encounter this type of abandonment) if Fire or DEH deliver the waste to Darling International (Prefer small quantities)

*You may need to complete a SD Hazmat Waste Substance Analysis Form, or any other forms that may be required by different cities – for their records.

22. Transportation Considerations

Transporting Hazardous Waste.

Transportation of hazardous waste commonly requires the use of a DTSC registered hazardous waste transporter. A transporters registration can be verified here: http://www.dtsc.ca.gov/database/Transporters/Trans000.cfm. Transporter requirements can be found here: http://www.dtsc.ca.gov/HazardousWaste/Transporters/upload/Hazardous-Waste-Transporter-Requirements.pdf. The County of San Diego DEH-HMD maintains a transporter variance for Emergency Operations which requires renewal each year. Certain types of hazardous wastes have reduced transportation requirements and can be transported without the use of a registered hazardous waste transporter and manifest.

The following wastes have reduced transportation requirements and are typically transported on a consolidated manifest/bill of lading: http://www.dtsc.ca.gov/HazardousWaste/Transporters/upload/HWM_FS_SB271_Gen_Req1.pdf

Used Oil Filters
Used Oil
Contents of an oil/water separator
Solids contaminated with used oil
Brake fluid
Antifreeze
Antifreeze sludge
Parts cleaning solvents, including aqueous cleaning solvents
Hydroxide sludge contaminated solely with metals from a wastewater treatment process
Paint-related wastes, including paints, thinners, filters and sludge
Spent photographic solution
Dry cleaning solvents including perchloroethylene,
naphtha, and silicone-based solvents
Filters, lint and sludge contaminated with dry cleaning solvent
Asbestos and asbestos-containing materials
Inks from the printing industry
Chemicals and laboratory packs collected at K-12 schools to a CUPA authorized school facility
Absorbents contaminated with wastes on this list
Filters from dispensing pumps for diesel and gasoline fuels

The following recyclable materials have even less requirements and can be transported with minimal records:

Used Oil in quantities less than or equal to 55 gallons to a CUPA permitted facility and is recycled.
Used Oil filters consolidated for recycling by a business
Automotive Lead Acid Batteries
Latex paints that are recycled
Household hazardous wastes up to 50 lbs taken to Household Hazardous Waste Facility
Small business (< 100kg/month generators) taking up to 50 Kg. to a permitted HHWF or TSDF
Universal Wastes such as light bulbs and mercury containing waste, household batteries, aerosols
Universal Waste Electronic Devices- TV's and other monitors, printers, computers…for recycle.
Transformer Oils with PCB's at 50ppm or less.

a. Useful Contacts:

DTSC Duty Officer	(800) 618-6942
SDFD Repair Facility	(858) 573-1353
City Environmental Services	(858) 492-5055
Household Hazardous Waste Hotline	(877) 713-2784
Cal Trans (for freeways)	(858) 467-3085
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations

*. Locate responsible party. Abandoned wastes are responsibility of property owner.

* Determine whether chemical is a waste or material that can be used or sold for use as is by responsible party. If it has been abandoned it is a waste.

* Determine if waste is RCRA or CA (non-RCRA) hazardous. RCRA hazardous means it is on the F, K, P, U list of wastes or meets a hazardous characteristic such as:

D001 = Ignitable, flashpoint equals 140F or less
D002 = Corrosive, pH is highly acidic (pH 0-2) or highly caustic (ph = 12.5 and above)
D003 = Reactive, it reacts violently when exposed to air or water
D004-D043 = Toxic due to heavy metals or organic consituent listed:
Characteristic Wastes:
http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/upload/OEARA_REG_Title22_Ch11_Art3.pdf
Listed Wastes:
http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/upload/OEARA_REG_Title22_Ch11_Art4.pdf

RCRA= D001- D043
Non-RCRA =

1) Used Oil, Latex Paint, Oily debris, Lead Acid batteries, Universal Wastes
2) RCRA wastes that require reclamation/processing before use,
3) Wastes that fail the CA testing (TTLC or STLC) for listed heavy metals/inorganics
4) Wastes that fail the CA testing for listed organic bioaccumulative substances
5) Wastes that acute oral LD50 less than 2,500 milligrams per kilogram;
6) It has an acute dermal LD50 less than 4,300 milligrams per kilogram;

HAZARDOUS WASTE DETERMINATION FOR NON-RCRA HAZARDOUS WASTE TOXICITY Characteristic- 66261.24

Calculated oral or dermal toxicity =

$$\sum_{X=1}^{n} \frac{\%Ax}{TAx}$$

% A*x* is the weight percent of each toxic compound in the mixture.
TA*x* is the acute oral or dermal LD50 or acute oral LDLO of each component.
$\sum_{1}^{n}$ is the summation of the calculations, by ingredient

Calculating Toxicity

http://www.sdcounty.ca.gov/deh/hazmat/pdf/hm-9267.pdf

1) Determine active ingredient: Active ingredients are acetaminophen 500 mg and diphenhydramine HCL 25 mg.
2) Determine toxicity:

$$\frac{100}{\frac{\%\ \text{chemical \#1}}{\text{(LD50 or LDLO chem. \#1)}} + \frac{\%\ \text{chemical \#2}}{\text{(LD50 or LDLO chem. \#2)}} + \frac{\%\ \text{chemical \#3}}{\text{(LD50 or LDLO chemical \#3)}}}$$

	Active ingredient		**Reference Source**
	Diphenhydramine HCL	Acetaminophen	
Rat Oral LD50 *Toxicity*	500 mg/kg	N/A	MSDS
	500 mg/kg	N/A	Merck Index
	500 mg/kg	2400 mg/kg	RTECS
Dermal Toxicity: No data was available			

Calculating Toxicity

3) Since the toxicity is less than the established oral LD50 threshold of 2500 mg/kg, determine the weight % of each active component in the waste pharmaceutical: Manufacturer states the caplet has an average weight of 645mg.

Acetaminophen **500/645 = 77.5 % by weight,**
Diphenhydramine HCL **25 / 645 = 3.8 % by weight.**

4) Calculate oral or dermal toxicity =

$$\frac{100}{\frac{77.5}{2400} + \frac{3.8}{500} = 0.0323 + 0.0076 = 0.0399} = 2{,}506.27 \text{ mg/kg}$$

The calculated oral toxicity is greater than the established oral LD50 threshold of 2500 mg/kg; therefore this waste pharmaceutical is NOT a non-RCRA hazardous waste.

1. It has an acute inhalation LC50 less than 10,000 parts per million as a gas or vapor;
2. It has an acute aquatic 96-hour LC50 less than 500 milligrams per liter
3. It contains any of the following substances at a single or combined concentration equal to or exceeding 0.001 percent by weight:
   (A) 2-Acetylaminofluorene (2-AAF);
   (B) Acrylonitrile;
   (C) 4-Aminodiphenyl;
   (D) Benzidine and its salts;
   (E) bis (Chloromethyl) ether (BCME);
   (F) Methyl chloromethyl ether;
   (G) 1,2-Dibromo-3-chloropropane (DBCP);
   (H) 3,3'-Dichlorobenzidine and its salts (DCB);
   (I) 4-Dimethylaminoazobenzene (DAB);
   (J) Ethyleneimine (EL);
   (K) alpha-Naphthylamine (1-NA);
   (L) beta-Naphthylamine (2-NA);
   (M) 4-Nitrobiphenyl (4-NBP);
   (N) N-Nitrosodimethylamine (DMN);
   (0) beta-Propiolactone (BPL);
   (P) Vinyl chloride (VCM);

* After properly characterizing waste, determine if waste is properly contained and safe to transport.
* Determine if person transporting waste is familiar with transportation requirements and has proper paperwork.

* Ensure Waste container is properly labeled.

* If transporting waste under variance, ensure receiving facility is listed on variance

* Non-Hazardous Waste, and certain quantities of Used Oil, Oil or Fuel Filters, Auto Batteries, Universal Waste or Latex paint going for recycling does not require a manifest or registration.

* If waste will be disposed using DTSC Superfund, contact DTSC Duty Officer.

* Ensure appropriate EPA ID number is used for Clandestine Labs, other abandoned RCRA wastes or roadside wastes.

5. Incident Specific Operations

1. Gasoline Tanker Rollover

When the Hazmat Team is dispatched to an incident involving a gasoline tanker rollover, which is not on fire, it will be necessary to off-load the gasoline before up righting the tank. Trying to upright a full gasoline tanker may cause the tank to break open with catastrophic consequences. In some cases the valving on the tank can be used to remove the product, but in most cases drilling into the tank is necessary.

a. Useful Contacts:

DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255
Chevron Bulk Terminal	(619) 232-3334
Chevron/Texaco Corporate	(925) 842-1000
BP San Diego Terminal	(619) 233-4400
CHEMTREC	(800) 162-8200

b. Action Plan Considerations:

*Begin site Safety / Incident Action Plan.

*Consider Initiating callback of HIRT staff. Offloading operations usually require a minimum of 10 (preferably 14) staff on scene to fill all of the assignments. (Hazmat 1, Eng 44, and DEH)

*Request IC on scene to contact owner of tanker, and request they respond to scene

*Ensure all personnel in hot zone are dressed in full turnouts and SCBAs.

*Monitor the area for flammability

Continuous perimeter monitoring
Hot zone monitoring – around rolled over tanker – during offloading operations
Receiving truck monitoring – verify plume expansion around exhaust vents
Depending on wind conditions, request DEH to bring the wireless chemical detector units for deployment at the scene

*Foaming operations:

Staffed foam lines in place.
Consider calling in Rescue 28/43 for large foam requirement
Prior to entry, if flammable atmosphere, foam should be applied

1) To standing pools of flammable liquid
2) To areas of potential electrical shorts (Cab, Blinking lights, Battery?)
3) To areas saturated with fuel (open ground)

1. Gasoline Tanker Rollover **(continued)**

*Bonding and grounding operations:

1) Set grounding rod into ground (driven at least 2 feet into the ground), or locate suitable water line, etc.
2) Attach grounding cord to rolled over vehicle - first
3) Then attach grounding cords to grounding point.
4) Attach Bonding Cable to rolled over vehicle – first
5) Then attach Bonding Cable to receiving truck.
6) If possible – ground receiving truck to a second grounding point.

*Stabilize rolled over tanker on multiple sides. As liquid is removed the weight will shift.

Cribbing in place
Tow Trucks (possibly) to act as stability points to prevent shifting.
Secure multiple directions from movement during drilling operations

*Drilling Operations

Ensure drill, air tanks, hole plugs, flashlight and other equipment is fully functional.
Two person drilling teams, with a two-person backup team in place.
One person drills and the other uses the squirt bottle to lubricate and cool the hole-saw.
After each hole is drilled, plug the hole before drilling the next
*Drill a minimum of two holes for offloading tankers (vacuum break)

*Offloading operations

When possible use stinger attached to vacuum truck hose for off-loading product.
Lash stinger and hose to overturned vehicle prior to opening vacuum on receiving truck
Clear all none essential personnel from immediate area before offloading if possible.

*Up righting rolled over tanker:

After all obtainable product has been off loaded secure plugs in drilled holes
Confirm area is free of explosive gases by monitoring with CGI.
Reapply foam to area – as needed.
Release area to tow truck operators to start the up righting operations
Continue monitoring area with CGI

2. Clandestine Drug Labs

Because of the potentially dangerous chemicals involved, response to a clandestine drug lab should always be considered a hazardous materials incident. These incidents are a crime scene with the primary responsibility for controlling the incident, usually belongs to law enforcement. Remember that responses to a lab involve multiple agencies,

Proper disposal of hazardous waste at a clandestine lab is the responsibility of the law enforcement agency making the seizure. Most lab disposals are funded through the California Environmental Protection Agency, under a program known as the "Clandestine Laboratory Unit (CLU)". San Diego County's CLU number is CLU111111037. Because it is a seizure, the lead policy agency becomes the "generator" of hazardous waste. Law enforcement departments are likely to request Fire and Hazmat to provide standby assistance while they remove dangerous material found at the lab. The role of Hazmat should be limited unless the response involves abandoned drug lab waste. In most cases of abandonment, law enforcement will decline to be an active participant because they do not have an identified "bad guy".

Recognizing Possible Drug Labs

First Responders should be aware of indications of potential clandestine drug labs when responding to fires, suspicious odors, medical emergencies, or any other services requested. Common indications that an illegal lab is present include:

* Blacked out or covered up windows.
* Chemical odors like ether, solvents, ammonia, or a metallic taste in your mouth.
* Glassware associated with science labs like flasks, beakers, condensers, etc..
* Vacuum pumps
* Plastic, rubber tubing, or garden hoses going in through windows.
* Chemical containers of various sizes. (Especially Orange 10-gallon drums, multiple 5 gallon cans with solvent labels, or multiple one-gallon cans of Acetone or Alcohol)
* Heat sources like mantles, hot plates, and Industrial size pressure cookers with modifications.
* Unusual or extensive drainage or exhaust systems.

a. Useful Contacts:

Narcotics Task Force	(760) 268-5800
Drug Enforcement Agency (DEA)	(858) 616-4100
Methamphetamine Strike Force	(877) 662-6384
DTSC Duty Officer	(800) 852-7550
DEH-HIRT (daytime)	(858) 505-6673
DEH-HIRT (after-hours: Station M)	(858) 565-5255

b. Action Plan Considerations:

*Recognize signs that indicate the presence of an illegal drug operation (above).

*Stay upwind/upgrade from Lab location or abandoned containers.

*Because it is a criminal activity you are likely to face hazards from dangerous people. (If bad guys return they could have guns)

2. Clandestine Drug Labs **(continued)**

*Begin Site Safety / Incident Action Plan

*Establish zones and Isolate the area.
If entry was made into the area, decontaminate before leaving the scene.

*Are there fumes? Determine if evacuations or sheltering in place are necessary.
Remember dangers at a lab can have serious health consequences, always wear appropriate PPE.

*Specially trained law enforcement (or DEA) chemist should assist in deactivating drug lab.
Avoid moving or touching anything at the site, especially if a reaction is in progress.

*Beware of booby traps.

*If not already on scene, contact DEH-HIRT to evaluate any methamphetamine laboratories for contamination in compliance with the Methamphetamine Contaminated Properties Act of 2005 requirements (AB1078).

3. Subsurface Landfill Fires

The biological decomposition processes that occur within a landfill produce heat and many components including methane. Because this reaction occurs underground, and is insulated by the ground cover, there are often underground temperatures as high as 160 degrees Fahrenheit. The combination of high temperatures and readily available fuel can lead to subsurface landfill fires if oxygen is introduced into the system. These fires normally remain in the smoldering stage and do not spread rapidly. Consequently the biggest danger of a subsurface landfill fire is not the fire, but the possibility of a sinkhole.

A subsurface landfill fire that is discovered has probably been burning several weeks or even months before you arrived so the initial response should be that of mitigating the initial hazard (sinkhole). (Notifications, isolating and securing, backfilling and covering, base line monitoring, etc.) There may be situations when a more aggressive response will be required. This response will depend on the site conditions and impacts to the surrounding community. No two landfills are alike! NOTE: Old (closed) landfills can exist in all parts of the county – not just currently operating places.

Indicators of a subsurface landfill fire:

*Unusual or rapid settlement.
*Changes in gas extraction well monitoring data in the landfill
Elevated CO readings and temps above 160 F.
*Venting smoke from fissures or well casings on the site.
*Presence of soot in any extraction wells.

c. Useful Contacts:

Enforcement for all landfills outside City of San Diego
DEH ask for LEA Supervisor (daytime) (858) 505-6700

Enforcement for all landfills within City of San Diego
City Development Services ask for LEA Supervisor (619) 533-3688

Miramar Landfill	(858) 694-7000
Sycamore Landfill	(619) 562-0530
Otay Landfill	(619) 421-3773
Ramona Landfill	(760) 789-3410
Borrego Landfill	(760) 789-3410

d. Action Plan Considerations:

*Approach upgrade/upwind

1) Do not drive Fire Apparatus onto landfill surface if underground fire is suspected, the potential for unopened sinkholes exists.
2) Wear proper PPE.

*Isolate the area around any sinkholes:

1) Set up perimeters,
2) Deny entry to unauthorized personnel.

3. Subsurface Landfill Fires **(continued)**

*Notifications:

1) Contact the appropriate Local Enforcement Agency (LEA) for the jurisdiction involved if landfill is not within a currently operating location.
2) Contact the appropriate Local Enforcement Agency (LEA) for the jurisdiction involved if landfill is within a currently operating location, to advise them of any actions you are planning on taking.

*Begin Site Safety / Incident Action Plan.

*Monitor for base-line of sampling locations at site:

1) Surrounding monitoring wells
2) Probes for temperature and CO levels, etc.
3) WARNING: Gas levels within a stable landfill are extremely high. Special instrumentation is required to test for Methane and Carbon Monoxide/Dioxide readings that should be in the high percentages (not PPM)

*Prior to taking aggressive action at the scene of a landfill fire, discuss the consequences with the local LEA and operators first. Remember this fire has been burning for a long time before you arrived on scene. Actions that can be considered:

1) Turn off any air injection system.
2) Shut off or reduce extraction rates from gas wells as necessary.
3) Shut off or reduce any liquid extraction systems, as necessary

*Precaution should be taken when introducing water into landfill

1) Gas production is increased when water is introduced,
2) Increased ground water impacts could occur,
3) Steam can be generated from open, or not yet opened cracks on the surface.

***Allow the subsurface fire to smother it's self out – This may take several months.**

4. Ammonia Refrigerant Releases

Anhydrous ammonia is used as a refrigerant in icehouses and skating rinks throughout the county. Anhydrous ammonia is listed by the DOT as a nonflammable gas. Even though ammonia will burn within the limits of 16-25% in air and is extremely toxic in much lower concentrations. There have been several incidents where Hazmat and emergency responders have been hurt by exploding ammonia gas.

Ammonia (NH_3) is a colorless gas with a penetrating, suffocating odor. The gas is lighter than air (0.59 vapor density), and has a boiling point of -28F. When liquid ammonia is released, as during an industrial or traffic accident, large amounts of the gas can be concentrated around the immediate area. Ammonia acts as an alkali and will destroy tissue depending on the length of contact exposure. The eyes and lungs are particularly susceptive to this corrosive action because of their moisture content. Contact with the liquid can cause frostbite.

a. Useful Contacts:

DEH-HIRT (daytime) (858) 505-6673
DEH-HIRT (after-hours: Station M) (858) 565-5255
Plant Manager / Business Plan

b. Action Plan considerations:

*Approach UPGRADE/UPWIND

- SCBA and turnout clothing are to be worn
- Rubber gloves and face shield should be used when working around liquid.
- Avoid driving a response vehicle to close to the incident.

*Isolate the area following the DOT Emergency Guidebook recommendations

- Set up perimeters and zones
- Deny entry to unauthorized personnel

*Begin Site Safety / Incident Action Plan.

Detain plant safety manager and other facility experts for specific shutdown and ventilation information.

*Treat exposed victims with large amounts of water for 15 minutes.

*Monitor the area using a Photoionization Detector (PID) or Colorimetric detector tubes to determine airborne concentrations initially:

PID units with a lamp of 10.6ev or higher will provide good verification testing, if the initial readings are compared to the Colorimetric tube readings initially.

4. Ammonia Refrigerant Releases **(continued)**

*Mitigation concerns:

1) Contact with liquid can cause frostbite. Clothing frozen to the skin should be thawed with water before removal.
2) If on fire, extinguish using agent suitable for material surrounding.
3) If a gas cloud exists:
    i. A fog spray can be effective in reducing the offsite consequences of a gas release.
    ii. A strong reaction will occur, and a large cloud will form, if water is applied directly to pure liquid ammonia.
        1. Dig a pit, pond holding area to contain liquid runoff created
    iii. Positive pressure and/or exhaust ventilation can be used to reduce vapor concentrations.
4) Absorb bulk liquid with fly ash or cement powders.

6. Biological Agent Incidents

- Protocols for Response -

I. Overview Managing an incident involving biological agents presents a unique set of challenges to HIRT and other responding agencies. Unlike a chemical response, the agent(s) involved will likely not be visible to the eye, can spread well beyond the original release point (for contagious agents), and are difficult to detect or quantify (given the limitations of the instrumentation available). Biological agents are also popular for use as terrorist threats or hoaxes, similar to bomb threats, though not as widely employed. Response agencies may not know about the release of an actual agent until well after the fact, when its presence is detected by an unusual incidence of the disease in the general public. This points out the need to coordinate with entities not usually involved with a typical HIRT response, such as the County Health Officer, the County Public Health Lab and Epidemiology staff, as well as agencies like CDC, or USAMRIID.

This Agent Specific Threat Guidelines have been Redacted in their entirety for Operational Security considerations

General Action Plan considerations:

- Shut down all ventilation and air handling systems, until such time as the threat is determined to be non-credible.
- Isolate suspected area - deny entry, until such time as the threat is determined to be non-credible and the area has been cleared by the law enforcement agency in command at the scene.
- Isolate suspected contaminated people; get the names of all involved and provide a limited briefing on the suspect agent involved. Do not tell potential victims what their symptoms should be (power of suggestion) - instead determine what their signs and symptoms are through directed questioning.
- Contact FBI: they will access additional federal agencies and special teams, and may have additional intelligence information.
- Suspect a secondary attack, and perform a search for secondary devices. This should be done before any significant time is spent on the interior of the facility.
- Decisions about evacuation, quarantine, and antibiotic treatment must be made based on confirmation of field immunoassay test kit results, or Public Health Lab findings.
- All response staff involved in the incident should complete an exposure report, and file it in with the appropriate departmental staff. Outside agencies should contact DEH staff involved in the incident on a regular basis to obtain the latest status on the Public Health Labs test results.
- Physical force shall not be used to stop the public from leaving such a scene, unless the County Health Officer formally declares a “Public Health Emergency”.
- Media access to information about the incident should be routed through the appropriate law enforcement PIO, such as the San Diego Police Department (SDPD), San Diego Sheriff's Office (SDSO), or FBI PIO staff. No unapproved interviews or statements should be given by any staff, either during or after the response to the media.

- REMEMBER these incidents are potential or actual Crime Scenes.

7. Land & Water Quality Standard Operational Guidelines for HIRT after hours response

Sewage releases from private residences/businesses.

Reports of sewage releases received after normal business hours are to be investigated by HIRT staff within 24 hours of the report. Sewage releases that occur from a sewer main are the responsibility of the sewer district. Sewage releases that occur from a lateral or from an onsite waste water disposal system are the responsibility of the property owner. HIRT staff shall adhere to the following guidelines when responding to these incidences:

1. Verify the release (location and scope) and determine the origin of the wastewater. Often times this can be done by contacting the appropriate sewer district and asking them to make an initial investigation. Document the release with photos and/or written descriptions.
2. Attempt to contact the property owner or other responsible party (tenant, property manager, etc.) to notify them of the problem.
3. Issue an official notice (LU-474 form) to the property owner. The following code section is to be cited: San Diego County Code or Regulatory Ordinances, Title 6, Division 8, Chapter 3, Section 68.311.
4. The time allowed to repair a sewage release can vary and should be left up to the discretion of the responder. Due to the potential for immediate health hazards, the release must cease and clean-up efforts must begin immediately to mitigate any potential hazard(s). Releases from onsite wastewater disposal systems require that the septic tank be pumped out as soon as is possible.
5. All official notices and calls that require follow-up by Land & Water Quality staff shall be forwarded to the Chief of Land & Water Quality and to the respective supervisory staff member the following work day.

Abandoned and improperly constructed wells

Wells that are improperly constructed improperly maintained, or have been abandoned, must be brought into compliance with the State of California Water Well Standards (Bulletins 74-81 and 74-90). HIRT staff identifying a well that is in violation of these standards shall adhere to the following guidelines when responding to these incidences:

1. Verify the well location and the deficiencies in the construction of the well, if any. Document the well with photos and/or written descriptions.
2. Attempt to contact the property owner or other responsible party (tenant, property manager, etc.) to notify them of the concerns related to the well.
3. Issue an official notice (LU-473 form) to the property owner. The details of the notice shall be written on the back of the form in the area provided.
4. Any wells that have been, or are suspected to have been, contaminated with a hazardous material/waste or another substance that could negatively

impact the groundwater supply must be reported to the Site Assessment and Mitigation Program for further investigation.

5. All official notices and calls that require follow-up by Land & Water Quality staff shall be forwarded to the Chief of Land & Water Quality and to the respective supervisory staff member the following work day.

Mobile Home and RV Park Complaints

All Mobile Home and RV Parks located outside the boundaries of an incorporated city and within San Diego County are under permit with the Department of Environmental Health through the California Code of Regulations, Title 25, Division 1, Chapter 2. Complaints related to conditions at these facilities should be investigated after hours by HIRT staff if potential health and safety issues are identified. HIRT staff shall adhere to the following guidelines when responding to these incidences:

1. Verify the violation and the extent of the health & safety concern, if any. Document the violation with photos and/or written descriptions.
2. Attempt to contact the park manager or other responsible party (Park owner, maintenance personnel, etc.) to notify them of the concerns related to the park.
3. Immediate health and safety issues must be addressed immediately by the park management. Failure to do so will result in the issuance of an official notice by HIRT staff. No standard form exists for this notice. Staff should utilize the generic Land & Water Quality Inspection form (LU-480) to complete the notice.
4. All official notices and calls that require follow-up by Land & Water Quality staff shall be forwarded to the Chief of Land & Water Quality and to the respective supervisory staff member the following work day.

Small water systems and Boil Water Orders

The County of San Diego, Land and Water Quality Division, Small Drinking Water Systems Program will issue Boil Water Orders to water systems that have repeat total coliform present results or a routine E. coli present result in their distribution systems. Small Drinking Water Systems Program staff work with the owner or operator of the water system to properly disinfect the wells, storage tanks, and distribution piping and then flush the system. Repeat samples are brought to a certified laboratory and analyzed for absence /presence of total coliforms. If repeat samples are collected on a Friday, then owner or operator of the water system is directed to call Station M on Saturday if samples are total coliform absent. Total coliform results have a 24 hour turnaround time.

1. County of San Diego, Hazardous Materials Division, HIRT staff may be called on a Saturday to lift a Boil Water Order. Small Drinking Water Systems Program staff only lifts Boil Water Orders if DEH physically reviews the repeat sample results. This could be email, fax or paper results. After results are received, the Boil Water Order can be verbally lifted.

2. If Boil Water Order is lifted, HIRT staff can provide FHD form “Information Regarding the Boil Water Order” http://www.sdcounty.ca.gov/deh/food/pdf/publications_boilwater.pdf.
3. HIRT staff will contact the Chief of Land & Water Quality and the respective supervisory staff member on Monday morning to provide an update on the Boil Water Order.

Substandard housing complaints

The Land & Water Quality Division is responsible for investigating substandard housing complaints for properties that are within the County’s jurisdictional areas. This does not include the following municipalities: Chula Vista, El Cajon, Escondido, Imperial Beach, National City, Oceanside, or San Diego. All HIRT staff receiving a complaint that warrants immediate action shall adhere to the following guidelines:

1. Document all items that are substandard within the confines of the home or on the exterior of the home. This should include photos, if possible. Substandard housing conditions are listed under the California Health and Safety Code, Section 17920.3 which is listed below:

17920.3. Any building or portion thereof including any dwelling unit, guestroom or suite of rooms, or the premises on which the same is located, in which there exists any of the following listed conditions to an extent that endangers the life, limb, health, property, **safety**, or welfare of the public or the occupants thereof shall be deemed and hereby is declared to be a substandard building:

(a) Inadequate sanitation shall include, but not be limited to, the following:

(1) Lack of, or improper water closet, lavatory, or bathtub or shower in a dwelling unit.

(2) Lack of, or improper water closets, lavatories, and bathtubs or showers per number of guests in a hotel.

(3) Lack of, or improper kitchen sink.

(4) Lack of hot and cold running water to plumbing fixtures in a hotel.

(5) Lack of hot and cold running water to plumbing fixtures in a dwelling unit.

(6) Lack of adequate heating.

(7) Lack of, or improper operation of required ventilating equipment.

(8) Lack of minimum amounts of natural light and ventilation required by this **code**.

(9) Room and space dimensions less than required by this **code**.

(10) Lack of required electrical lighting.

(11) Dampness of habitable rooms.

(12) Infestation of insects, vermin, or rodents as determined by the health officer.

(13) General dilapidation or improper maintenance.

(14) Lack of connection to required sewage disposal system.

(15) Lack of adequate garbage and rubbish storage and removal facilities as determined by the health officer.

(b) Structural hazards shall include, but not be limited to, the following:

(1) Deteriorated or inadequate foundations.

(2) Defective or deteriorated flooring or floor supports.

(3) Flooring or floor supports of insufficient size to carry imposed loads with **safety**.

(4) Members of walls, partitions, or other vertical supports that split, lean, list, or buckle due to defective material or deterioration.

(5) Members of walls, partitions, or other vertical supports that are of insufficient size to carry imposed loads with **safety**.

(6) Members of ceilings, roofs, ceilings and roof supports, or other horizontal members which sag, split, or buckle due to defective material or deterioration.

(7) Members of ceiling, roofs, ceiling and roof supports, or other horizontal members that are of insufficient size to carry imposed loads with **safety**.

(8) Fireplaces or chimneys which list, bulge, or settle due to defective material or deterioration.

(9) Fireplaces or chimneys which are of insufficient size or strength to carry imposed loads with **safety**.

(c) Any nuisance.

(d) All wiring, except that which conformed with all applicable laws in effect at the time of installation if it is currently in good and safe condition and working properly.

(e) All plumbing, except plumbing that conformed with all applicable laws in effect at the time of installation and has been maintained in good condition, or that may not have conformed with all applicable laws in effect at the time of installation but is currently in good and safe condition and working properly, and that is free of cross connections and siphonage between fixtures.

(f) All mechanical equipment, including vents, except equipment that conformed with all applicable laws in effect at the time of installation and that has been maintained in good and safe condition, or that may not have conformed with all applicable laws in effect at the time of installation but is currently in good and safe condition and working properly.

(g) Faulty weather protection, which shall include, but not be limited to, the following:

(1) Deteriorated, crumbling, or loose plaster.

(2) Deteriorated or ineffective waterproofing of exterior walls, roof, foundations, or floors, including broken windows or doors.

(3) Defective or lack of weather protection for exterior wall coverings, including lack of paint, or weathering due to lack of paint or other approved protective covering.

(4) Broken, rotted, split, or buckled exterior wall coverings or roof coverings.

(h) Any building or portion thereof, device, apparatus, equipment, combustible waste, or vegetation that, in the opinion of the chief of the fire department or his deputy, is in such a condition as to cause a fire or explosion or provide a ready fuel to augment the spread and intensity of fire or explosion arising from any cause.

(i) All materials of construction, except those which are specifically allowed or approved by this **code**, and which have been adequately maintained in good and safe condition.

(j) Those premises on which an accumulation of weeds, vegetation, junk, dead organic matter, debris, garbage, offal, rodent harborages, stagnant water, combustible materials, and similar materials or conditions constitute fire, health, or **safety** hazards.

(k) Any building or portion thereof that is determined to be an unsafe building due to inadequate maintenance, in accordance with the latest edition of the Uniform Building **Code**.

(l) All buildings or portions thereof not provided with adequate exit facilities as required by this **code**, except those buildings or portions thereof whose exit facilities conformed with all applicable laws at the time of their construction and that have been adequately maintained and increased in relation to any increase in occupant load, alteration or addition, or any change in occupancy.

When an unsafe condition exists through lack of, or improper location of, exits, additional exits may be required to be installed.

(m) All buildings or portions thereof that are not provided with the fire-resistive construction or fire-extinguishing systems or equipment required by this **code**, except those buildings or portions thereof that conformed with all applicable laws at the time of their construction and whose fire-resistive integrity and fire-extinguishing systems or equipment have been adequately maintained and improved in relation to any increase in occupant load, alteration or addition, or any change in occupancy.

(n) All buildings or portions thereof occupied for living, sleeping, cooking, or dining purposes that were not designed or intended to be used for those occupancies.

(o) Inadequate structural resistance to horizontal forces.

"Substandard building" includes a building not in compliance with Section 13143.2.

However, a condition that would require displacement of sound walls or ceilings to meet height, length, or width requirements for ceilings, rooms, and dwelling units shall not by itself be considered sufficient existence of dangerous conditions making a building a substandard building, unless the building was constructed, altered, or converted in violation of those requirements in effect at the time of construction, alteration, or conversion.

2. HIRT staff shall attempt to contact the property owner or other responsible party (property manager, etc.) to notify them of the problem.
3. HIRT staff shall advise the tenant on items that are identified as substandard and those that could present an immediate health or safety hazard. In some cases staff may suggest that the tenant seek alternate housing if the hazards are too great.
4. The Repair Notice/Official Notice must be completed and reviewed by County Counsel prior to delivery to the property owner. Land & Water Quality staff will typically complete this portion of the enforcement activity.
5. All complaints that require follow-up by Land & Water Quality staff shall be forwarded to the Chief of Land & Water Quality and to the respective supervisory staff member the following work day.

OIL AND FUEL SPILLS GUIDELINE

September 30, 2010

According to storm water regulations promulgated by the Regional Water Quality Control Board and adopted by city and county ordinances, and by the California Code of Regulations, Title 22, **oil and fuel spills in any amount are to be mitigated by emergency responders** (Note: small oil spills can be cleaned up by the responsible party, if they so choose). Mitigation measures may include using absorbent material including sand or pigs to absorb spilled petroleum.

The solid waste generated by mitigating petroleum spills is considered a hazardous waste by the state of California (California Waste Code #352 - Other Organic Solids), unless sampling and testing of the waste proves otherwise. This is a general guideline and may not apply in all cases. Used motor oil, for example, will likely be hazardous for heavy metals and should be considered hazardous even if the LEL is < 10%.

FUEL AND OIL SPILLS LESS THAN 42 GALLONS (FEDERAL REPORTING LEVEL)

Public Agency Response

This approach can be followed by the local public works agency, by Caltrans, or by County of San Diego emergency response personnel.

If possible, the absorbent material used to mitigate the fuel spill should be placed in closed, properly labeled drum(s) or containers and transported to a public works yard that already has a storage area for solid waste contaminated with petroleum.

Non-Public Agency Response

If a local public works agency, Caltrans or County of San Diego emergency responders are not at the scene mitigating the spill and handling the waste disposal, then an alternative method of managing the used absorbent material is to determine if the absorbent material is flammable.

To determine if the used (waste) absorbent material is flammable, fill a small container with a representative amount of used absorbent material and loosely place a lid on the container. Use a combustible gas indicator (CGI) to check the head space in the container. If vapors in the head space are equal to or greater than 10% of the lower explosion limit (LEL), then the waste absorbent material must be managed as a hazardous waste and must be disposed of using a licensed hazardous waste hauler. If the vapors in the head space are less than 10% of the LEL, then the waste absorbent material can be disposed of as non-hazardous solid waste.

FUEL AND OIL SPILLS GREATER THAN 42 GALLONS

In the case of an emergency response involving a large amount of petroleum, and a corresponding large volume of solid waste, the sand or soil contaminated with petroleum will need to be properly managed. This means that the contaminated soil needs to be either stockpiled or placed in closed, properly labeled drums. If the contaminated soil is stockpiled, follow the procedures outlined in RWQCB Resolution R9-2007-0104*,* Conditional Waiver No, 8.II.D.2.

In general, the following need to be complied with:

a) The responsible party (discharger) must submit a signed/completed Section A of the Temporary Waste Pile Certification form (Appendix A) within 30 days of the discharge. The property owner must approve and acknowledge the placement of the waste at the site.

b) Soils and associated solid waste containing petroleum hydrocarbons placed in temporary waste piles:

    1) Shall be limited to a maximum time of 90 days and
    2) The waste was derived from one source.

c) Temporary waste piles must be:

    1) Covered by plastic sheeting (not less than 10 mills thick) to adequately prevent

rainwater infiltration, control fugitive dust and other nuisances

2) Underlain by plastic sheeting (not less than 10 mills thick) or a liner of low permeability that will prevent leachate from infiltrating to groundwater.

d) The responsible party (discharger) must submit a signed/completed Section B of the Temporary Waste Pile Certification form (Appendix A) within 10 days of completing the removal of all waste and restoring the site to original condition.

Large volumes of impacted soil will need to be characterized (sampled) to determine what disposal or soil management options are available. Keep in mind that each disposal facility must comply with its specific permit conditions and each facility will have analytical testing requirements. Landfills generally require analytical report from a state-approved laboratory. In general, the Regional Water Quality Control Board (RWQCB) has identified that if the soil contains any Total Petroleum Hydrocarbon (TPH) concentrations, the soil must be managed as contaminated soil.

If the spill cannot be mitigated at the time of the response, it is highly suggested that the spill mitigation be transferred from an emergency response action to an extended mitigation action. An extended mitigation action should be transferred to the Site Assessment and Mitigation program (SAM) through the Voluntary Assistance Program (VAP) (Appendix B) or through the RWQCB Spills, Leaks and Cleanup Program (SLC).

VERSION 08.02.19

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

TEMPORARY WASTE PILE CERTIFICATION
[SECTION A]

I. TEMPORARY WASTE PILE GENERATOR INFORMATION

Generator Name:			
Generator Contact and Title:			
Generator Mailing Address:			
City:	County:	State:	Zip:
Telephone:	Fax:	Email:	

II. WASTE INFORMATION

Local Oversight Program Case No.:			San Diego Water Board File No.:	
Waste Type: (check all that apply)	☐ Gasoline	☐ Diesel	☐ Other Petroleum Hydrocarbons	
	☐ Other Impacted Dredged Spoils		☐ Other:	

Contaminant Concentrations *(Used additional pages as needed)*:

Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI
Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI
Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI	Mean	Mean+80%CI

Waste Pile Quantity (yd^3):

Description of Containment Method:

III. TEMPORARY WASTE PILE SITE INFORMATION

Site Property Owner Name:			
Site Address:			
City:	County:	State:	Zip:
Telephone:	Fax:	Email:	
Assessor Parcel Number(s):		Hydrologic Area/Subarea:	

IV. PROPERTY OWNER ACKNOWLEDGMENT

I hereby acknowledge receipt of the waste soil described in section II and that I have reviewed any associated reports. By signing this form I acknowledge that the Generator of this waste has certified that all 8.II.D waiver conditions have been met.

Signature (Owner or Authorized Representative) _____ Date _____

Print Name _____ Title _____

V. GENERATOR CERTIFICATION

I hereby certify that the information provided regarding soil characterization is a complete and accurate representation of the subject soil, and that the soil is not hazardous waste as defined by California Code of Regulations Title 22 and by the U.S. Environmental Protection Agency (Code of Federal Regulations Title 40), and that all 8.II.D waiver conditions have been met.

Generator Signature _____ Date _____

Print Name _____ Title _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

TEMPORARY WASTE PILE CERTIFICATION
[SECTION B]

Final Disposition of Waste: ☐ Off-site/Landfill Disposal ☐ On-site Reuse/Disposal ☐ Off-site Reuse/Disposal ☐ Other:			
Property Owner/Discharger Name:			
Property Owner/Discharger Contact and Title:			
Property Owner/Discharger Mailing Address:			
City:	County:	State:	Zip:
Telephone:	Fax:	Email:	
Assessor Parcel Number(s):		Hydrologic Area/Subarea:	
Date(s) Waste Disposed:			
Quantity of Waste Disposed: (in cubic yards for each disposal date)			
Disposal Location(s): (for each disposal date)			

I. FINAL WASTE DISPOSAL INFORMATION

II. FINAL DISPOSAL CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature (Owner or Authorized Representative) _____ Date _____

Print Name _____ Title _____

P.O. BOX 129261
SAN DIEGO, CA 92112-9261
ATTN: NASSER SIONIT
(619) 338-2239
(619) 338-2315 (FAX)
www.sdcounty.ca.gov/deh/waste/contamination.html

FOR OFFICE USE:

Date Received _____

Submittal Fee Paid _____

File #_____

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH (DEH)

VOLUNTARY ASSISTANCE PROGRAM
APPLICATION FOR ASSISTANCE

(PLEASE READ BOTH PAGES OF THIS APPLICATION PRIOR TO COMPLETION)

A. Site Name _____ Assessors Parcel Number _____

Site Address _____
Street City State Zip Code

B. Application Submitted By:

Contact Person _____ Telephone (___) _____ FAX (___) _____

Company Name _____ E-mail Address _____

Mailing Address _____
Street City State Zip Code

Notes: 1. Applicant is responsible for payment to the County. Invoices will be sent to the applicant at this address unless other arrangements are made.
2. DEH requires all applicants to upload electronically all the reports and work plans to the State Water Resources Control Board's database.

C. Property Owner* _____ _____
Print Name Signature

Telephone (___) _____ FAX (___) _____

Mailing Address _____
Street City State Zip Code

*** Note: Property Owners have the ultimate responsibility to ensure that all environmental issues associated with their property are resolved in accordance with all applicable standards, guidelines, and regulations.**

D. Brief Project Description _____

_____

_____

_____

Type of Assistance Requested _____

_____

I accept the application requirements and project review conditions listed on Page 2 of 2 and I agree to pay all costs associated with DEH staff time and services within 30 days of receiving an invoice.

_____ _____ _____
Original Signature of Applicant Printed Name Date

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

VOLUNTARY ASSISTANCE PROGRAM

The Voluntary Assistance Program is designed to provide the applicant with staff consultation, project review, and public health assessment pertaining to properties suspected or known to be contaminated with hazardous substances. California Health and Safety Code Sections 101480-101490 authorize the County Department of Environmental Health (DEH) to enter into voluntary agreements for the oversight of remedial action at sites contaminated by wastes.

The DEH staff will review and manage all projects in accordance with applicable regulatory requirements, industry practices, and the current version of the DEH Site Assessment and Mitigation Manual. Our goal throughout project review is the protection of human health, water resources and the environment. Upon completion of a project, DEH will issue a letter addressing the applicant's specific project goals. Open lines of communication between DEH and the applicant provide the best opportunities for expedient review and successful project resolution.

Application Requirements

- Sections A, B, C, and D must be completed on the "Application for Assistance" form (Page 1 of 2), along with the applicant's original signature.
- Fully describe your project and your specific request(s) for DEH review and written response (Section D). As necessary, include a cover letter to clarify your project needs.
- Submit all relevant documentation/reports with the application. All documents containing geologic and/or contaminant migration interpretations must be signed by an experienced professional with the appropriate California registration or certification.
- All work is to be in accordance with applicable regulatory requirements, industry practices, and the current version of the DEH Site Assessment and Mitigation Manual.
- As of January 1, 2010, DEH requires all applicants to electronically upload all reports, results of investigations, work plans, and data collected to the State Water Resource Control Board's GeoTracker geographic information system. For instructions and information on uploading contact, GeoTracker@waterboards.ca.gov.
- An **initial payment of $1,420.00, payable to the County of San Diego,** is required at the time of application submittal. This payment covers the first ten hours of staff review time. Staff time in excess of ten hours will be invoiced to applicant and must be paid within 30 days of receipt of the invoice. The staff billing rate is currently $142/hour. **Staff assistance will not be provided on delinquent accounts.**

Project Review Conditions

- Within five (5) workdays of DEH receipt of your complete application, the project is identified by a DEH File No. and assigned to a DEH project manager.
- The DEH will notify the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB) that the project has been submitted for DEH review.
- A copy of all written DEH correspondence will be sent to the applicant and forwarded to the legal property owner. Project files will be available for public review.
- DEH has the option of referring the project to the DTSC or RWQCB at any time during the project review process. If the applicant ceases work, or requests DEH to cease work, on a project prior to resolving site contamination issues, then DEH would refer the project to the appropriate agency and/or identify the project as unresolved in the DEH database.

6. HIRT Operations – Hazmat Group Positions

Hazmat Group Supervisor:

The hazardous materials group supervisor is the Fire Captain assigned to Hazmat 1 and reports to the operations chief. The supervisor is responsible for implementation of the operational hazmat portion of the incident, assignment of resources within the group, and reporting on the progress of control operations and status of resources within the group. The structure for operations shall be according to the Incident Command System described previously.

Hazmat Group Supervisor Checklist:

Check-in and obtain briefing from Operations Section Chief

Ensure the development of Control Zones and Access control Points.

Evaluate and recommend public protection options to Operations Chief.

Establish environmental monitoring of hazard site.

Ensure Site Safety Plan is developed and implemented.

Assign ICS Hazmat positions including:

1) Assistant Site Safety,
2) Entry Team Leader,
3) Decontamination Team Leader,
4) Safe Refuge Manager
5) Technical Reference Specialist,

Participate in developing Incident Action Plan.

Conduct safety meetings with personnel.

1) Entry Objective
2) Extent of Entry
    i. Number of Entry Teams
    ii. Primary, Back-up, & Secondary Entry Team
3) Level of protection/type of Chemical Protective Equipment
    i. Entry Team
    ii. Decon Team
    iii. Support Personal
4) Specific Rescue Plan
5) Decontamination Procedures to be used

Obtain current weather forecast.
Ensure appropriate agencies are notified through Incident Command.

Hazmat Safety Officer (Assistant Site Safety Officer)

The Hazmat Safety Officer reports directly to the Hazmat Group Supervisor and has collateral duties with the Incident Site Safety officer under the ICS system. Person coordinates safety related activities for the Hazmat group and advises the Hazmat Group Supervisor on all aspects of health and safety. Has the authority to stop or prevent unsafe acts anywhere within the incident.

Hazmat Safety Officer Checklist:

Check-in and obtain briefing from Incident safety Officer.

Obtain briefing from Hazmat Group Supervisor.

Assist in preparation of Site Safety Plan.

Advises the Hazmat Group if deviations from Site Safety Plan occur.

Has authority to alter, suspend, or terminate any activity that may be unsafe.

Ensure medical services are assigned for personnel.

Ensure all personnel in Exclusion and Contamination Reduction Zones receive medical monitoring.

Ensure medical records for Hazmat Group are maintained.

Supervise work/rest cycles for the Entry Team and Decon Unit.

Advise Group Supervisor of special safety concerns.

Maintains an appropriate log of activities.

Entry Team Leader:

Hazmat Entry Team Leader reports to the Group Supervisor, supervises activities of Entry Team and Backup team, and is responsible for overall entry operations of assigned personnel within exclusion zone or (hot zone).

Entry Team Leader Checklist:

Check-in and obtain briefing from Hazardous Materials Group supervisor.

Supervise entry operations.

Recommend actions to mitigate situation within hot zone.

Carry out actions, as directed by the Hazmat Group supervisor to mitigate release.

Maintain communications and coordinate operations with Decon Leader.

Coordinate operations with Site Access Control Leader and Safe Refuge Manager.

Maintain communication with Technical Reference Specialist.

Direct rescue operations, as needed, in Exclusion Zone.

Perform any other duties assigned by Group Supervisor.

Site Entry Team(s):

The site entry team is responsible for making entry into the exclusion area (hot zone), and accomplishing the objectives called out for in the incident action plan. The Entry Team Leader coordinates and communicates with the site control team leader, the primary entry and back-up teams, and the technical reference specialist. The structure for operations within the zones shall be according to the ICS.

Entry Team Duties

Obtain briefing from site control team leader:

1) Material(s) involved
2) Recommended level of protection
    i. Chemical protective suit type
    ii. Glove type
    iii. Boot type
3) Review safety signals

Three long blasts	Evacuate
Hand at throat	Out of air/can't breathe
Hands on head	Need assistance
Thumbs up	I'm alright/I understand
Thumbs Down	Negative/No
Grip partner's wrists	Evacuate

4) Obtain medical monitoring as directed by entry conditions

Primary Entry Team

Minimum of two people in proper protective equipment.

DUTIES:

1) Maintain communications with Entry team Leader.
2) Report on conditions inside the Exclusion Area (Hot Zone).
3) Identify the product or gather samples, if necessary.
4) Assess the degree of hazard (i.e., size and/or quantity of spill).
5) Mitigate or contain the hazard.

Back-Up & Secondary Team(s) as needed

An equal number of personnel in the same protective equipment as the Entry Team.

DUTIES:

1) Be prepared to rescue the Entry Team.
2) Assist and/or relieve the Entry Team in the contamination of the hazard.
3) Furnish additional equipment or supplies to Entry Team as needed.

Decon Team Leader

The Decontamination Team Leader reports to the Hazardous Materials Group supervisor and oversees the operations of decon team members (handlers, rinsers, baggers within the contamination reduction / decon corridor (warm zone).

Decon Team Leader Checklist

Obtain briefing from the Hazmat Group Supervisor and the Technical Reference Specialist regarding the material(s) involved.

Coordinate with the site control team leader to identify

- Contamination Reduction (Decon) corridor
- Auxiliary access control path,
- Equipment decontamination station.

Identify contaminated people and equipment.

Assign staff to decon positions:

- Handler(s)
- Rinser(s)
- Bagger(s)

Supervise the operations of the decontamination element in the process of decontaminating of people and/or equipment.

Maintain control of movement of people and equipment within the contamination reduction zone.

Ensure contamination, and contaminants do not migrate outside the Decon corridor.

Coordinate handling, storage, and transfer of contaminants within the Contamination Reduction Zone.

Maintain communications with Entry Team Leader.

Coordinate operations with Site Access Control and Safe Refuge Manager.

Coordinate transfer of contaminated patients requiring medical attention (after Decon) to Medical Group.

Perform any appropriate duties related to decontamination that may be assigned by the Hazardous Materials Group Supervisor.

Site Access Control Leader

The Site Access Control Leader reports to the Hazardous Materials Group Supervisor. The Leader will be responsible for identifying all the areas of the hazardous materials incident site, using appropriate barrier tape, and is responsible for controlling the movement of people and equipment through appropriate access routes at the hazard site. The Access Control will also be responsible to supervise assigned personnel to control access to the incident site and to maintain records on those persons who do enter beyond the contamination control line, and insure that injured or exposed individuals are decontaminated prior to leaving the incident site.

Site Access Control Leader Checklist:

Obtain a briefing from the hazardous materials group supervisor.

Identify all areas of the incident site using appropriate barrier method
Oversee placement of:

- Exclusion Control Zone Line
- Contamination Reduction Zone Control Line.
- Establish Safe Refuge Area within Contamination Reduction Zone.

Organize and supervise personnel to control access into/out of each zone

- Ensures that unprotected or unauthorized personnel do not enter beyond the contamination control line.

Ensure that appropriate action taken to prevent spread of contamination.

Ensure that injured or exposed individuals are decontaminated prior to departure from the hazard site.

Coordinate with Medical Group for proper separation and tracking of potentially contaminated individuals needing medical attention.

Maintain observations of any changes in climate conditions or other circumstances external to hazard site.

Maintain communications with Entry Team Leader.

Maintain communications with Decon Team Leader.

Ensure appropriate agencies are notified, as needed, through Incident Command.

Maintain records

Safe Refuge Area Manager

The safe refuge area manager is responsible for the assemblage of civilian personnel who are witness to the hazardous materials incident or who were on site at the time of the spill. This assemblage of individuals will assist the incident commander and law enforcement, in collecting intelligence information, help to reduce confusion at the incident and provide for the separation of contaminated persons from uncontaminated. This area should be located inside the contamination control line and away from the personnel decontamination station. When activated, the medical division could locate their triage area and transportation area near the safe refuge area, but they should not be co-located. The safe refuge area manager is also responsible for making sure that injured or exposed individuals are decontaminated prior to departure from the incident site.

Safe Refuge Area Manager Checklist:

Obtain briefing from the Hazmat Group Supervisor and access control team leader.

Identify the safe refuge area, and ensures traffic control routes are functional.

Maintains the area in an orderly condition and coordinates with the medical group for the proper separation of potentially contaminated individuals.

If necessary, wear chemical protective equipment.

Ensure that injured or exposed individuals are decontaminated prior to departure from the incident site.

- Record information on injured or exposed personnel.

Technical Reference Specialist

The Hazardous Materials Technical Reference Specialist reports to the Hazmat Group Supervisor, and provides technical information and assistance to the Hazmat Group. The Technical Reference Specialist is responsible for attempting to identify and determining the properties of the material(s) involved using various reference sources such as computer databases, technical journals, CHEMTREC, and contact with facility representatives. Additional duties at the beginning of the incident include making recommendations to the hazardous group supervisor regarding the level of protective clothing, decontamination solutions to be used, and is responsible for product identification using HAZ CAT tests and other means of identifying unknown materials. The technical support team will assist the primary entry and back-up teams in donning chemical protective equipment and assist the entry team leader in the maintenance of time records. The structure for operations shall be according to the ICS as described herein.

Technical Reference Specialist Checklist:

Check-in and obtain briefing from Hazmat Group Supervisor.

Provide technical support to the Hazmat Group Supervisor.

Maintain communication with Entry Team Leader.

Provide and interpret environmental monitoring information.

Provide analysis of hazardous material sample.

Determine personal protective equipment compatibility to hazardous material.

Recommend level of protection.

Provide technical information of the incident for documentation.

Assist in providing notifications to appropriate agencies as directed by the Hazmat Group Supervisor.

Assist with projecting potential environmental effects of the release.

Performs any added duties related to technical reference that is assigned by Group Supervisor.

7. Funding Sources

The person or company responsible for the incident or owner of the property the incident occurred on is responsible for cleanup and emergency worker costs. However, when there is no responsible party, or the party is unable to pay for cleanup, the jurisdiction where the incident occurred may be forced to pay. The following are possible alternative funding sources that should always be considered:

1. **State Superfund (DTSC)** Daytime: (916) 255-6504 After Hours (800) 852-7550
   California will not fund oil spill cleanups, or incidents in excess of $20,000.
   Source of all drug lab disposal funding in California. (CLU contract)

2. **Federal EPA** (415) 947-8000
   (800) 300-2193
   Will fund only large incidents in excess of $20,000 and/or those on Indian reservations. Will require the response of a Federal On-Scene coordinator to oversee the project.

3. **US Coast Guard** (619) 278-7033
   Will take command and control of water borne spills.
   Will dispatch a member of the Pacific Strike team to oversee larger or long duration spills.

4. **Drug Enforcement Agency (DEA)** (858) 616-4100
   Source of all drug lab disposal funding in Southern California if an active lab is discovered.

5. **Cal Trans** Dispatch (858) 467-3085
   (858) 637-3800
   Will fund most cleanups on Freeways and Freeway ramps.

6. **California Fish and Game - OSPR** Dispatch (858) 467-4201
   Can provide funding for oil spills that impact wildlife areas, creeks, streams, or originate from a fixed petroleum supplying facility. 24 Hours: (951) 443-2969 or (888) 334-2258

7. **U.S. Forest Service** – Cleveland National Forest (858) 673-6180
   Agency responsible for all illegal disposal cleanup costs within the Cleveland National Forest.

8. **Household Hazardous Waste Programs** (877) 713-2784
   Each jurisdiction within the county is responsible for providing disposal alternatives for their citizens at zero or minimal costs. This program will not be usable for disposing of wastes found abandoned on city owned property.

8. New Equipment Acceptance – DEH HIRT

All new and replacement equipment received by the Department of Environmental Health (DEH), Hazardous Materials Division, that is intended for use by the Hazardous Incidence Response Team (HIRT) shall be processed through the following acceptance guidelines. These guidelines are designed to ensure that equipment purchased by DEH is delivered "as-ordered" by the vendor in the agreed upon configuration/specification. In addition these guidelines are designed to verify proper equipment calibration and functioning prior to actual use in the field or in the lab environment.

1. **Invoice review**
   - **a.** Upon receipt of any equipment the invoice shall be reviewed by the DEH staff person accepting the delivery. Comparison of the invoice to the equipment order Form 212 must be completed to verify that the equipment being received is identical to the equipment that was ordered in both type and quantity.
   - **b.** If it is possible to do so, DEH staff shall refuse delivery of equipment that differs from the equipment that was ordered per Form 212.
   - **c.** Should there be a discrepancy in the type or the quantity of equipment received or the order is refused, staff shall immediately contact the vendor in an attempt to resolve the matter.
   - **d.** Staff shall make notification to the Supervising EHS in the event that an order does not conform to the type, specifications, or quantities of equipment per Form 212.

2. **Equipment screening, calibration and testing**
   - **a.** New and replacement equipment shall be screened to verify that there is no damage or defects to the equipment as a result of shipping, mishandling by the vendor, or as a result of the manufacturing process . This is critical for personal protective equipment (PPE) items such as suits, boots, gloves, respirators, etc. Equipment found to have defects or be damaged will be returned to the vendor for replacement.
   - **b.** All new equipment that requires calibration shall have the calibration completed, to the manufacturer's specifications, prior to use in the field or the lab. Calibration dates and results shall be recorded by the DEH staff person who completes the calibration process.
   - **c.** Equipment that can be subjected to testing prior to actual use will be checked for proper operation and functioning before being used in the field or in the lab. Equipment should be checked against known sources and/or agents to verify that the equipment is functioning as designed and within the parameters set forth by the manufacturer. Malfunctioning equipment will be reported to the Supervising EHS and DEH staff will contact the vendor/manufacturer in an attempt to address the issue(s).

3. **Quick Sheet development and documentation retention**
   - **a.** All equipment that requires more than basic knowledge for use will require the development of a "Quick Sheet". The Quick Sheet is designed to outline the basic operation of the equipment for staff. Quick Sheets may also contain frequently used features of the equipment or situations where the equipment is suitable/un-suitable for use. Staff shall develop the Quick Sheet and place it with the equipment (preferably inside the pelican case or other container) to provide immediate access.
   - **b.** All documentation (operator manuals, vendor information, etc.) for new equipment shall be kept with the equipment or shall be stored in a specific location within the lab that is accessible to all HIRT team members.

c. Any additional documentation received by the manufacturer or the vendor shall be placed with the previous documentation.

4. Equipment Accessibility

a. Vehicles will be stocked with similar equipment as space allows, if equipment is available.

b. Vehicle inventory sheets will be updated for each vehicle. All equipment not on the vehicle will be stored in approved fixed ER storage locations.

c. Specialized equipment with limited inventory will be maintained within the ER lab or other designated location for collection by a responder should it be needed.

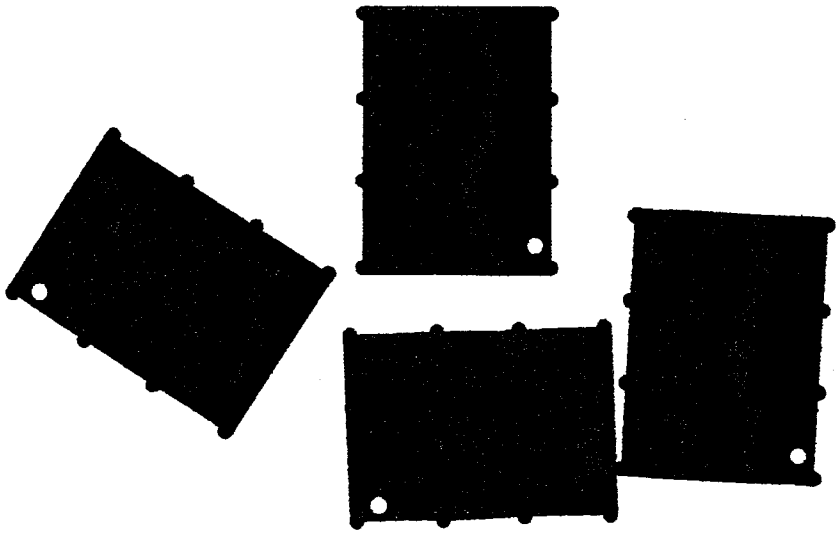
d. Responders will be provided instruction on equipment access and usage upon receipt.

Unified San Diego County Emergency Services Organization Hazardous Materials Incident Emergency Response Team Program

HIRT

Policies and Procedures Manual

December 16, 1993



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UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: HIRT PROVIDER RESPONSE STANDARDS

SECTION: 100.0	ADOPTED: 8/17/93	REVISED:

HIRT RESPONSE STANDARDS

I. TRAINING STANDARDS

All HIRT providers will:

A. Be trained to NFPA standards.

B. Meet all operational requirements of CCR Title 8 Section 5192 and 29 CFR 1910.120.

C. Be trained to perform entry in both level A and level B protective equipment.

II. OPERATING STANDARDS

A. Mitigation/Control Capabilities

The HIRT Provider responsible for mitigation/control actions will be able to:

1. Respond to reported incidents and advise the Incident Commander (IC) on additional local, State, Federal and private resources required to manage and/or mitigate the problem.

2. Perform technical response procedures in accordance with established standard operating procedures (SOPs), personal protection guidelines and all applicable State regulations.

3. Request use of the State of California Emergency Reserve Account (ERA) for emergency cleanup.

4. Provide technical expertise, assistance and equipment at the incident.

5. Perform duties as directed by the IC.

6. Act as the IC's agent in the management of cleanup operations.

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: HIRT PROVIDER RESPONSE STANDARDS

SECTION: 100.0	ADOPTED: 8/17/93	REVISED:

B. Public Health and Safety Capabilities

The HIRT Provider responsible for Public Health and Safety issues will be able to:

1. Identify, or assist in the identification of, unknown spilled material at the scene.

2. Act as technical advisor on characteristics and direct health and environmental effects of the hazardous materials at the scene.

3. Assist the IC in determining the necessity for evacuation and establishing reentry criteria.

4. Sample contaminated soil, water or air to determine the extent of contamination and identify any public health concerns.

5. Provide analytical laboratory support as needed.

6. Assist the IC in identifying potential sources of hazardous materials release.

7. Provide information on proper protective actions at the scene.

8. Recommend cleanup levels and advise on the adequacy of cleanup both during and after the emergency.

9. Assist the IC in obtaining financial and other resources necessary for any required cleanup.

10. Assist the agency having jurisdiction in obtaining appropriate enforcement action against any responsible party.

11. Provide on-scene liaison with Poison Control, Emergency Medical Services (EMS) and State and

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: HIRT PROVIDER RESPONSE STANDARDS

SECTION: 100.0	ADOPTED: 8/17/93	REVISED:

Federal Agencies.

C. Capabilities Required of All Providers

All HIRT Providers will be able to perform the following functions:

1. Understand what hazardous materials are, the risks associated with them at an incident, and the potential outcomes associated with a hazmat emergency.

2. Recognize the presence of hazardous materials in an emergency situation.

3. Identify hazardous materials.

4. Understand the role of the individual trained to the first responder awareness level as well as the role of the DOT Emergency Response Guidebook.

5. Recognize the need for additional resources and advise the IC to make the appropriate notifications.

6. Basic hazard and risk assessment.

7. Select and use proper specialized chemical protective equipment.

8. Understand basic hazmat terms.

9. Basic and advanced control, containment and/or confinement operations within the capabilities of the resources and PPE available within the unit.

10. Understand and implement decontamination procedures.

11. Understand the relevant SOPs and termination procedures.

12. Implement an employers (business) emergency response plan.

13. Classify, identify and verify known and unknown materials using field survey instruments and equipment.

14. Function within an assigned role in the Incident Command System.

15. Understand basic chemical and toxological terminology and behavior.

16. Understand hazmat medical management protocols as established by the California Emergency Medical Services Authority (EMSA).

17. Rescue/Evacuation.

18. Isolation/Deny entry.

19. Contain/Control.

20. Exposure protection.

21. Communicate with the IC, first responder agencies, dispatch centers and State and Federal regulatory agencies.

III. BACKUP TEAMS

A backup team must be provided as a rescue team for the personnel working in the hot zone. The backup team shall:

A. Be protected at the same level of protection as the team working in the hot zone.

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: HIRT PROVIDER RESPONSE STANDARDS

SECTION: 100.0	ADOPTED: 8/17/93	REVISED:

B. Maintain line of sight contact among personnel operating in the hot zone.

C. Visually monitor personnel operating within the hot zone.

IV. RESPONSE TIMES

A. Each HIRT provider will meet a maximum response time of sixty minutes for ninety percent of all hazardous materials incidents dispatched.

B. A second, simultaneous, response will require a maximum response time of ninety minutes.

C. Response time begins at the time of dispatch and ends when the unit arrives on scene.

POLICY AND PROCEDURES MANUAL

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: GUIDELINES FOR THE RELEASE OF HIRT UNITS FROM EMERGENCY SCENES

SECTION: 101.0	ADOPTED: 10/26/93	REVISED:

PURPOSE

The purpose of these Guidelines is to provide a standardized criteria to be utilized by the Incident Commander in determing when to release HIRT Units from an emergency scene. These Guidelines are necessary to ensure the availability of HIRT resources for multiple or escalated HazMat emergencies in the San Diego Operational Area.

GUIDELINES

When a HIRT Unit is requested and dispatched to the scene of a hazmat emergency, that unit automatically becomes a resource of the Incident Commander.

Although this guideline covers avariety of situations, there will be times when special circumstances may necessitate the release of HIRT resources. Common sense should be exercised in these instances.

HIRT may be released from the scene:

1. Whenever the local jurisdiction has the ability to complete the incident plan in an approved, safe and acceptable manner.

2. When HIRT is notified of a second incident and it is determined that the local jurisdiction has the ability to carry out the incident plan in a safe and approved manner.

3. When the product or material does not pose a threat to people or the environment and can be isolated from the public.

4. Once it is determined by the Incident Commander that the emergency phase of the operation and all entries into the exclusion zone are complete.

Section 200 – Training

At a minimum, all HIRT response staff providing service to the JPA will be trained to California Specialized Training Institute (CSTI) Technician Level (160 hours) and meet the skills and competencies chaptered in the National Fire Protection Association's (NFPA) 472 (Professional Competence of Responders to Hazardous Materials Incidents). Additional training to supplement the basic skills/competencies shall be determined by the HIRT response providers on an as needed basis.

POLICY AND PROCEDURES MANUAL

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: HAZARDOUS MATERIALS INCIDENT DEFINITION

SECTION: 300.0	ADOPTED: 8/17/93	REVISED:

PURPOSE

To define a Hazardous Materials Incident for the purposes of member share computation.

DEFINITION

A Hazardous Materials Incident is defined as a request for Emergency response assistance from a member of the Unified San Diego County Emergency Services Organization's Hazardous Materials Incident Response Team (HIRT) program. This request for assistance may be in response to a public or environmental health problem resulting from the release, or threatened release, of a hazardous material.

This assistance may or may not require the movement of personnel and equipment in order to provide the requested aid.

All telephone conversations 15 minutes or longer in length regarding an emergency response in progress constitutes a hazardous materials incident for statistical and budgetary purposes.

POLICY AND PROCEDURES MANUAL

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: Cost Recovery Guidelines

SECTION: 400.0	ADOPTED: 10/26/93	REVISED:

PURPOSE

The purpose of this document is to provide guidelines to the HIRT Administrator to assist in the identification of those incidents where cost recovery efforts are appropriate.

BACKGROUND

The HIRT Program provides a unified approach to emergency response to hazardous materials incidents within the San Diego County Operational Area. As a program of the Unified San Diego County Emergency Services Organization, HIRT is funded by the individual member jurisdictions/agencies. In order to minimize the cost of the program to member jurisdictions, a cost recovery procedure has been instituted.

It is the intent of the HIRT Policy Committee to recover the costs incurred in the emergency response to actual or potential hazardous materials incidents.

POLICY

Any and all costs incurred during the emergency response to a real or potential hazardous materials incident to protect the health and safety of the public, livestock, wildlife or the environment are eligible for cost recovery. These costs include:

a. Personnel costs
b. Equipment Usage
c. Replacement of damaged/expendable equipment
d. Laboratory costs
e. Supplies
f. Contract Services
g. Administrative/Overhead
h. Legal Services

Cost recovery shall be instituted for any incident which is the result of:

a. Negligence

UNIFIED SAN DIEGO COUNTY HAZMAT INCIDENT RESPONSE TEAM (HIRT)	SUBJECT: Cost Recovery Guidelines

SECTION: 400.0	ADOPTED: 10/26/93	REVISED:

b. Improper use, storage or disposal of hazardous materials.
c. Violation of any law or regulation.
d. Accidental releaes.

The responsible party shall be liable for the costs incurred during the incident. The responsible party shall be defined as:

a. The person causing the incident.
b. The employer of the person causing the incident.
c. Present and/or prior owners of the property where the incident occurred.
d. Operators of the property where the incident occurred.
e. Transporters of the hazardous materials.
f. Disposers of the hazardous materials.

SECTION C

EPA

OFFICE OF EMERGENCY AND REMEDIAL RESPONSE

STANDARD OPERATING SAFETY GUIDES

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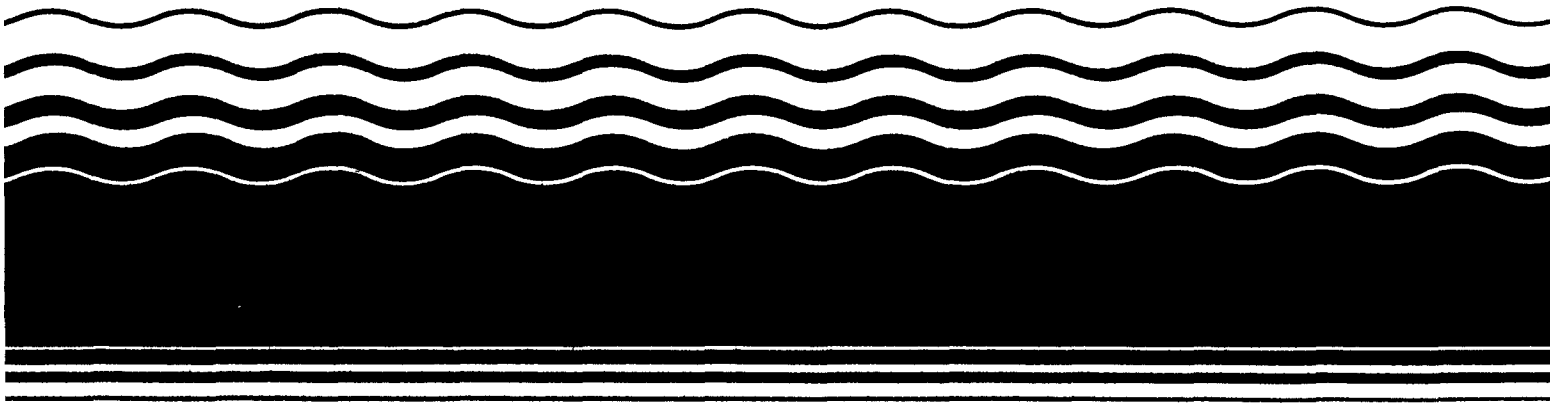

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STANDARD OPERATING SAFETY GUIDES

Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Washington, DC 20460

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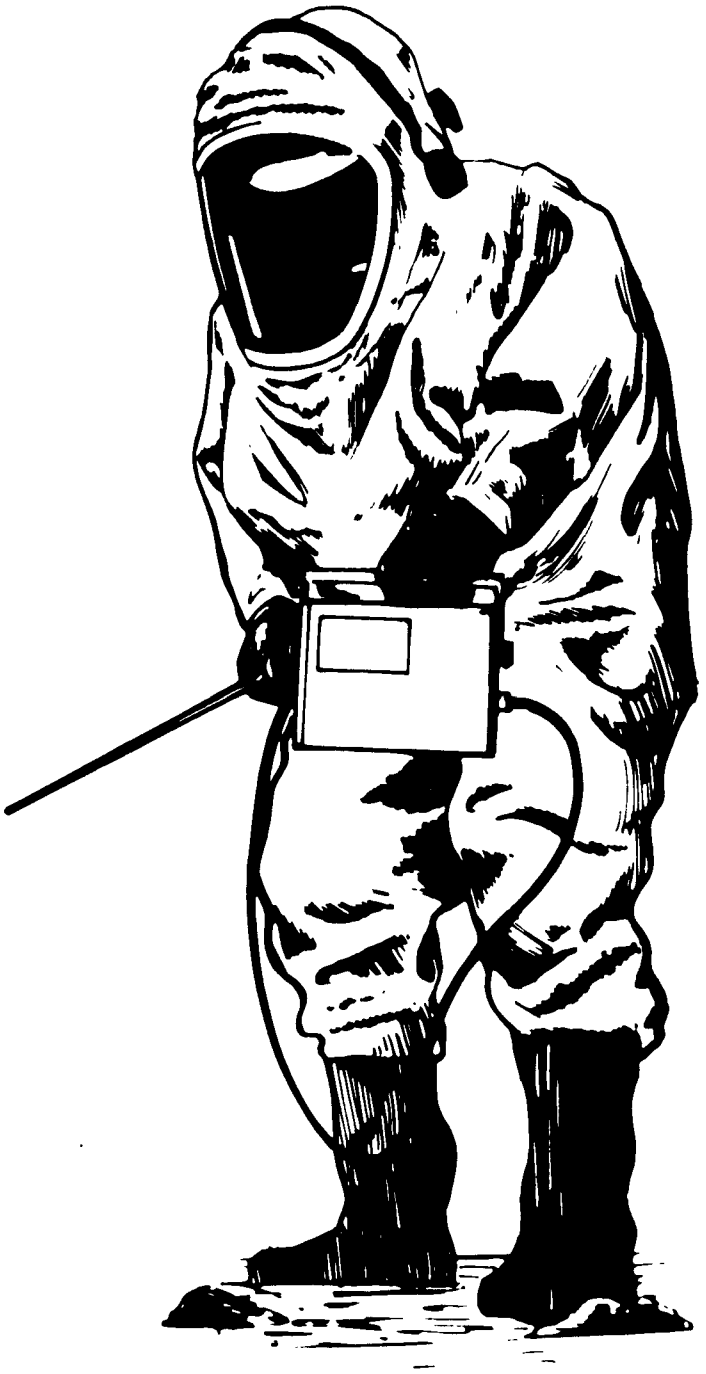
CHAPTER 1 INTRODUCTION



CHAPTER 1 INTRODUCTION

1.0 INTRODUCTION

Protecting the health and safety of workers is a major consideration when hazardous substances are present at a site. Not only must site personnel perform a variety of technical tasks correctly and efficiently, but they also must work in an often unpredictable and potentially dangerous environment. By adequately equipping and training personnel, and by using appropriate standard operating procedures, the potential for harm from exposure to hazardous substances can be greatly reduced.

The purpose of this document is to provide guidance for ensuring the health and safety of site personnel who work with hazardous substances or who work at uncontrolled hazardous waste sites. This guidance is intended for federal, state, and local managers and personnel at sites where hazardous materials are present. It is meant to supplement professional training, experience, and knowledge, and can be used as:

- A planning and management tool for field managers;
- An educational tool that addresses fundamental aspects of the required health and safety programs and plans at hazardous waste sites;
- A reference document for site personnel who may need to review important aspects of on-site health and safety.

The U.S. Occupational Safety and Health Administration (OSHA) has established regulations governing the health and safety of employees engaged in hazardous waste operations and emergency response. These regulations, codified at 29 CFR §1910.120, contain general requirements for health and safety programs, site characterization and analysis, site control, training, medical surveillance, engineering controls and work practices, personal protective equipment, exposure monitoring, informational programs, material handling, decontamination, and emergency procedures. EPA has incorporated these standards by reference into its regulations at 40 CFR Part 311. Both sets of regulations are discussed in further detail in Section 1.1.

A number of documents have been developed to provide guidance for protecting the health and safety of workers exposed to hazardous substances. The purpose of this document is to update the U.S. EPA's July 1988 *Standard Operating Safety Guides* (SOSG) to incorporate the new requirements at 29 CFR §1910.120 and 40 CFR Part 311. This document also includes information presented in the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (the "Four-Agency document"), which was written jointly by OSHA, EPA, the National Institute for Occupational Safety and Health (NIOSH), and the U.S. Coast Guard (USCG). The Guide also draws from other EPA documents, including the EPA *Health and Safety Manual*, the EPA *Health and Safety Audit Guidelines*, and the EPA's Standard Operating Procedures for hazardous waste site operations. Refer to **Appendix A** for a list of other useful sources of information.

This revised SOSG is intended to provide a comprehensive overview of the information needed by employers to meet their responsibility to assure the health and safety of employees engaged in operations at hazardous waste sites. Developing and implementing a worker protection program is a dynamic process that requires both initial and ongoing planning, periodic revision, and attention to a variety of site details. This guidance document provides a comprehensive overview of the structure of that process as a whole, as well as a more detailed discussion of each of the individual components. Thus, this document is intended to supplement the OSHA regulations at 29 CFR §1910.120, but is not meant for use as a legal document or as a replacement to those regulations. This document is structured as follows:

- **Chapter 1** provides an overview of the purpose and scope of the document, and discusses how the requirements at 29 CFR §1910.120 and 40 CFR Part 311 fit into the

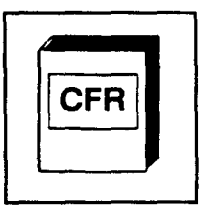
regulatory framework of worker protection standards.

- **Chapters 2 and 3** discuss initial planning activities that take place before work may begin at the site. *Chapter 2: Comprehensive and Site-Specific Health and Safety Program* outlines the components of the health and safety requirements at both the corporate and the site-specific level, and describes the relationship of the site characterization process to the development of the site-specific Health and Safety Plan (HASP). *Chapter 3: Training* discusses the health and safety training program required for workers and managers engaged in hazardous waste operations.

- **Chapters 4 through 11** provide a discussion of health and safety considerations for preliminary and on-going site activities. These include:

  Chapter 4: Site Control
  Chapter 5: Personal Protective Equipment
  Chapter 6: Air Monitoring
  Chapter 7: Medical Surveillance Program
  Chapter 8: Heat Stress and Cold Exposure
  Chapter 9: Decontamination
  Chapter 10: Drum Handling
  Chapter 11: Other Requirements and Safety Considerations.

1.1 REGULATORY BACKGROUND



Under the authority of section 126 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), EPA and OSHA promulgated identical health and safety standards to protect workers engaged in hazardous waste operations and emergency response. The OSHA regulations, codified at 29 CFR §1910.120, became effective on March 6, 1990 (54 FR 9294). (Corrections to the OSHA regulations were published on April 13, 1990 (55 FR 14072).) The EPA regulations incorporate the OSHA standards by reference and are codified at 40 CFR Part 311 (54 FR 26654).

The EPA and OSHA worker protection standards for hazardous waste operations and emergency response (HAZWOPER) apply to five groups of workers, as shown in **Exhibit 1-1**. This document addresses the standards as they apply to the first three groups of workers, those engaged in voluntary or mandatory cleanups at uncontrolled hazardous waste sites, or in corrective actions at treatment, storage, and disposal (TSD) facilities regulated under the Resource Conservation and Recovery Act (RCRA).

EXHIBIT 1-1

HAZWOPER standards apply to workers engaged in:

- Mandatory cleanups at uncontrolled hazardous waste sites
- Voluntary cleanups at uncontrolled hazardous waste sites
- Corrective actions at RCRA TSD facilities
- Routine hazardous waste operations at RCRA TSD facilities
- Emergency response operations without regard to location

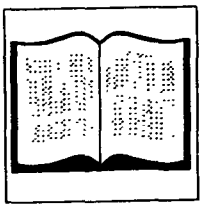
The HAZWOPER requirements for these workers, specified at 29 CFR §1910.120(a) through (o), are summarized in **Exhibit 1-2**. In addition, these provisions apply to any activities performed during the preliminary planning and evaluation stages of the remedial investigation and feasibility study (RI/FS), such as the preliminary assessment and site investigation (PA/SI).

HAZWOPER does not, however, apply to employees who do not have the potential to be exposed to hazardous substances. For example, administrative support personnel in the Site Command Post may not be covered by HAZWOPER, but are, of course, protected by other OSHA standards. They should also be made aware of the provisions of the emergency response plan, and must be briefed on emergency procedures and general site operations, such as the location of work zones.

EXHIBIT 1-2
Hazardous Waste Operations and Emergency Response at Uncontrolled Hazardous Waste Sites (29 CFR §1910.120(a)-(o))

(a) Scope, application, and definitions.
(b) Safety and health program.
(c) Site characterization and analysis.
(d) Site control.
(e) Training.
(f) Medical surveillance.
(g) Engineering controls, work practices, and personal protective equipment for employee protection.
(h) Monitoring.
(i) Informational programs.
(j) Handling drums and containers.
(k) Decontamination.
(l) Emergency response by employees at uncontrolled hazardous waste sites.
(m) Illumination.
(n) Sanitation at temporary workplaces.
(o) New technology programs.

1.2 REGULATORY SCOPE



The occupational safety and health standards, published at 29 CFR, established minimum requirements to ensure protection for all private sector employees in the U.S. The general industry standards at 29 CFR Part 1910 were derived largely from standards developed by industry consensus organizations and non-OSHA Federal safety and health standards. These requirements reflect practices previously recognized by most industrial sectors prior to regulation under the OSHA. The OSHA standards, however, make these practices mandatory.

Many of the OSHA standards at 29 CFR Part 1910 establish generic specifications for using worker tools, maintaining industrial structures, installing equipment to make the workplace safer (e.g., sprinkler systems), providing medical attention, and other general health and safety practices applicable to all types of employment. Other sections in 29 CFR Part 1910, however, are specific to employees engaged in a specific activity or industry, such as hazardous waste operations.

Specifically, §1910.120 (HAZWOPER) contains requirements to minimize the health and safety hazards associated with conducting hazardous waste operations at uncontrolled hazardous waste sites and RCRA TSD facilities, and conducting emergency response. In some instances, the HAZWOPER standards incorporate general worker protection provisions by reference. For example, §1910.120(g) requires employers engaged in hazardous waste operations and emergency response to follow the provisions in §1910.94 through §1910.100, which require controls to protect employees from exposure to hazardous substances and safety and health hazards. Those referenced sections may apply to other industries and activities as well, but HAZWOPER applies only to hazardous waste operations and emergency response during the covered activities and locations.

In addition to the requirements set forth at 29 CFR Part 1910, OSHA codified regulations at 29 CFR 1926, Subpart C, that set forth safety and health standards specifically applicable to the construction industry. Both 29 CFR Part 1910 and Part 1926 require employers to provide whatever training and education is appropriate for employees to safely perform a given task. **Exhibit 1-3** presents a list of the OSHA standards that might apply at uncontrolled hazardous waste sites. **Appendix B** describes these standards in greater detail. The remainder of this guide discusses the types of activities that must be undertaken during hazardous waste operations to ensure worker health and safety and to comply with the HAZWOPER requirements.

EXHIBIT 1-3
Other Potentially Applicable OSHA Standards under 29 CFR*

1910.20	Access to Employee Exposure and Medical Records
1910.24	Fixed Industrial Stairs
1910.27	Fixed Ladders
1910.28	Safety Requirements for Scaffolding
1910.38	Employee Emergency Plans and Fire Prevention Plans
1910.94	Ventilation
1910.95	Occupational Noise Exposure
1910.101	Compressed Gases
1910.133	Eye and Face Protection
1910.134	Respiratory Protection
1910.135	Occupational Head Protection
1910.136	Occupational Foot Protection
1910.141	Sanitation
1910.151	Medical Services and First Aid
1910.157	Fire Extinguishers
1910.212	General Requirements for all Machines
1910.165	Employee Alarm Systems
1910.181	Derricks
1910.252	Welding, Cutting, and Brazing
1910.307	Hazardous Locations
1910.1000	Toxic and Hazardous Substances
1910.1200	Hazard Communication
1926.20	General Safety and Health Provisions
1926.21	Safety Training and Education
1926.56	Illumination
1926.58	Asbestos
1926.59	Hazard Communication
1926.151	Fire Prevention
1926.152	Flammable and Combustible Liquids
1926.200	Accident Prevention Signs and Tags
1926.301	Hand Tools
1926.400	Electrical General Requirements
1926.401	Grounding and Bonding
1926.651	Specific Excavation Requirements
1926.652	Trenching Requirements

*Not intended as a complete list

FURTHER GUIDANCE: For additional information on employee health and safety at uncontrolled hazardous waste sites, see:

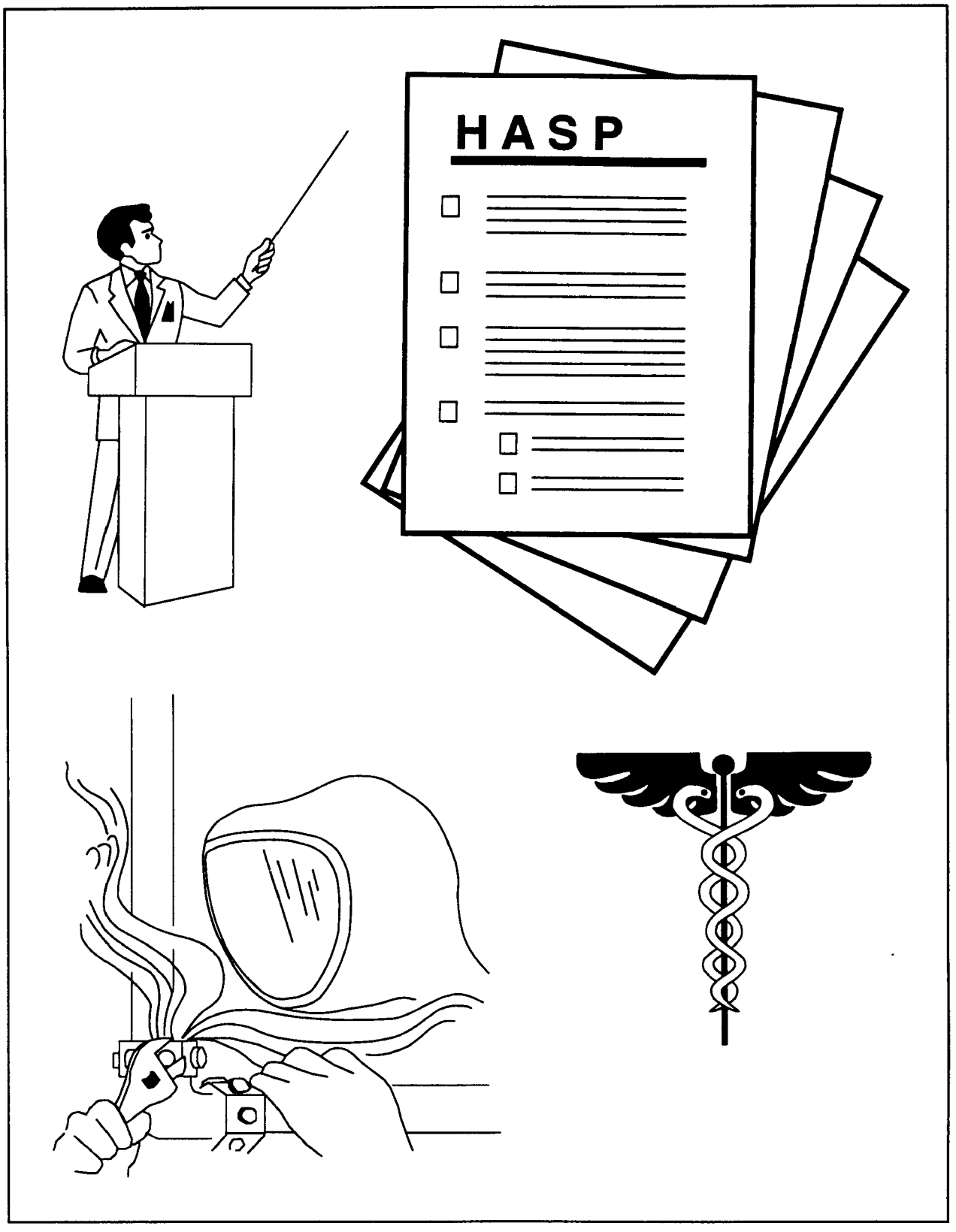
1. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985, NIOSH Publication 85-115).

2. *EPA Health and Safety Audit Guidelines* (U.S. EPA, 1989, EPA 540/G-89/010).

3. *OSWER Integrated Health and Safety Standard Operating Practice* (U.S. EPA, 1992, Publication 9285.0-01).

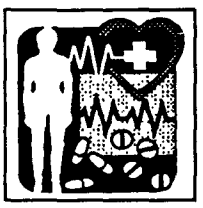
4. *Standard Operating Procedures for Site Safety Planning* (U.S. EPA, 1985, Publication 9285.2-05).

CHAPTER 2 COMPREHENSIVE AND SITE-SPECIFIC HEALTH AND SAFETY PROGRAM



CHAPTER 2 COMPREHENSIVE AND SITE-SPECIFIC HEALTH AND SAFETY PROGRAM

2.0 INTRODUCTION



The HAZWOPER regulations at 29 CFR §1910.120(b) require that any employer whose workers engage in hazardous waste operations at an uncontrolled hazardous waste site or who perform corrective actions at a RCRA TSD facility must develop and implement a written health and safety program. This program must be designed to identify, evaluate, and control health and safety hazards at any site, and to provide for emergency response during site operations. The program must be maintained by the employer and made available to: (1) any employee or employee representative; (2) any contractor, subcontractor, or other representative working for the employer who may be potentially exposed to hazardous substances; (3) OSHA personnel; and (4) personnel of federal, state, and local agencies with regulatory authority over the site. If an employer already has developed a health and safety program to meet the requirements of other federal, state, or local regulations, the employer may use the existing program to satisfy the HAZWOPER requirements, provided that any additional information not covered in the existing program, but required under HAZWOPER, is incorporated into the program.

The primary purpose of the written health and safety program is to serve as an organization-wide health and safety policy that applies to all employees of the organization, regardless of the location of the actual site where they are working. The HAZWOPER regulations at 29 CFR §1910.120(b) establish the components of the general program, as shown in **Exhibit 2-1**.

Because the written health and safety program is intended to be organization-wide, only one health and safety program should be developed by an employer, even if the employer has workers who perform operations at several different sites. As required by HAZWOPER, this program should define the organizational structure, describe the general health and safety training and medical surveillance programs, and establish the standard operating procedures for health and safety. In addition, the health and safety program must also require that both a comprehensive workplan and a Health and Safety Plan (HASP) be developed for each site where workers are engaged in hazardous waste operations. Each HASP includes plans for implementing, on a site-specific basis, applicable requirements set forth in the organization's health and safety program (see **Exhibit 2-1**). For this reason, the health and safety program should include procedures needed for coordination between the comprehensive and site-specific health and safety activities.

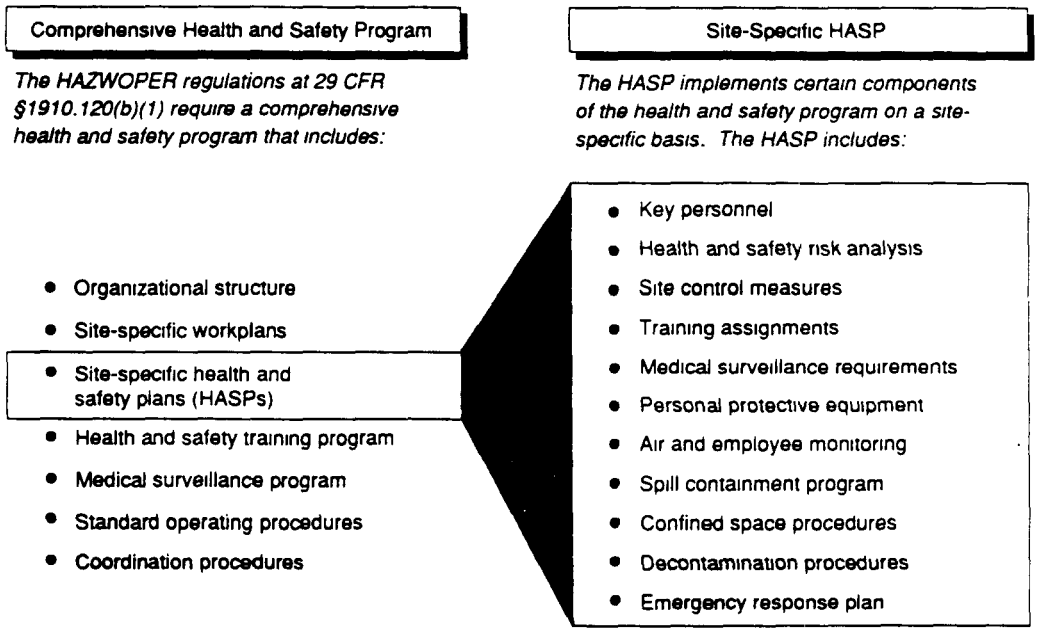
Section 2.1 below describes in more detail these general components of the written health and safety program. Because HASP development is a complex, iterative process, Section 2.2 focuses on the procedures for developing the HASP.

2.1 GENERAL COMPONENTS OF THE HEALTH AND SAFETY PROGRAM

As required by 29 CFR §1910.120(b), an organization's written health and safety program must include certain general program components. Each of these are described briefly below.

Organizational Structure. The organizational structure component of the written health and safety program identifies the specific chain of command in the employer's organization, and specifies the overall responsibilities of supervisors and employees in carrying out the health and safety program. The structure should identify the general supervisor for all hazardous waste operations; provide a roster of the health and safety supervisors of all the sites; and describe the responsibilities of other personnel engaged in hazardous waste operations or emergency response. The structure should also identify the lines of authority, communication, and coordination among personnel and managers in the organization. It is necessary to review and update the organizational structure periodically to reflect changes in personnel and operations.

EXHIBIT 2-1
Health and Safety Program:
Comprehensive and Site-Specific Components



Comprehensive Workplan. As required by HAZWOPER, the written health and safety program should specify that a comprehensive workplan will be developed for each site to evaluate the logistics and resources needed to reach work objectives for site operations. The workplan should identify anticipated cleanup activities as well as normal operating procedures. It should also establish implementation strategies for carrying out the training, informational, and medical surveillance programs of the general health and safety program. The following steps should be undertaken in developing the work plan:

- Review available information, including site records, waste inventories, manifests, sampling data, site photos, and other records;
- Define work objectives;
- Determine methods for accomplishing the objectives (e.g., sampling plan, defining alternate technologies);
- Determine personnel requirements;
- Determine need for additional training (refer to **Chapter 3** for specific requirements); and
- Determine equipment requirements.

Site-Specific Health and Safety Plan (HASP). In addition to the workplan, a site-specific HASP must be developed and implemented for each site where workers are potentially exposed to hazardous substances. Section 2.2 below discusses the components of the HASP and the process for its development.

Health and Safety Training Program. HAZWOPER requires that the health and safety program include a component to establish organization-wide health and safety training requirements for all site workers and supervisors. The training program must address the hazards present on-site, use of personal protective equipment, work practices to minimize risks, safe use of engineering controls and equipment, and medical surveillance requirements. The HASP for a particular site may implement these general training requirements on a site-specific basis (refer to **Chapter 3** for specific requirements).

Medical Surveillance Program. HAZWOPER requires that the written health and safety program also include a detailed program for ensuring and monitoring the general health of workers engaged in hazardous waste operations. As with the training program, the HASP for a particular site will address the medical surveillance program requirements and any special site-specific medical surveillance concerns. (Refer to **Chapter 7** for more information.)

Standard Operating Procedures. The HAZWOPER standards require employers to have established standard operating procedures for safe work practices. Such procedures should be specified in the written health and safety program. If the employer has already written and implemented these procedures, it is not necessary for new procedures to be developed.

Coordination Procedures. Because the health and safety program includes elements that are implemented on a site-specific basis, HAZWOPER requires that the program include procedures needed for coordination between the comprehensive and site-specific health and safety activities.

2.2 HASP DEVELOPMENT AND SITE CHARACTERIZATION

As discussed above, the HAZWOPER regulations at 29 CFR §1910.120(b)(4) require that a site-specific HASP be developed for each site where workers are engaged in hazardous waste operations. The purpose of the site-specific HASP is to address the health and safety hazards that may exist at each phase of site operations and to identify procedures for protecting employees.

A new HASP should not be developed if new tasks or hazards are identified at a site; rather, the original HASP should be updated. If a subcontractor is working at a site, the subcontractor should carefully evaluate and identify all tasks associated with the subcontracted activities, and prepare a health and safety plan addressing any identified hazards. This plan should be submitted to the site manager, who will incorporate it into the general site HASP after it has been reviewed for concurrence with the site workplan.

THE RULE IS:
ONE SITE, ONE HASP

Exhibit 2-2 describes in detail the specific components that should be included in the HASP. Also, **Exhibit 2-3** presents a sample HASP Table of Contents. Some of the areas that must be addressed in the HASP are discussed in further detail in later chapters of this document.

Development of the site-specific HASP is a process that incorporates the information collected during the site characterization phase of hazardous waste operations. Site characterization generally is divided into three phases:

- Prior to site entry, the preliminary evaluation (PE) is conducted off-site to gather information about the site and to conduct reconnaissance from the site perimeter.

- During the second stage, initial site entry, a visual survey is taken and preliminary air monitoring is performed. During this phase, site entry is restricted to properly trained and protected reconnaissance personnel.

- Once the hazards have been identified to the greatest extent possible, other activities may commence at the site. Monitoring continues, however, to provide a continuous source of information about site conditions.

It is important to recognize that site characterization (and, therefore, HASP development) is a continuous process. At each phase of site characterization, information should be obtained and evaluated to define the hazards that the site may pose. This assessment can then be used to develop the HASP for the next phase of work. The more accurate, detailed, and comprehensive the information available about a site, the more the HASP can be tailored to the actual hazards that workers may encounter. In addition to the formal information gathering that takes place during the phases of site characterization described here, all site personnel should be constantly alert for new information about site conditions that may indicate a need to update the HASP.

EXHIBIT 2-2
Components of the HASP

Key Personnel and Hazard Communications Plan (29 CFR §1910.120(b)(2))	The HASP should include names of key personnel such as Project Manager, Field Operations Leader, Site Supervisor, and Site Health and Safety Officer, as well as their alternates. The HASP should also identify communication procedures and provide for briefings to be held before site activity is initiated. These meetings should be held at any time they appear necessary to ensure that employees are adequately apprised of the health and safety procedures being followed at the site.
Health and Safety Risk Analyses (29 CFR §1910.120(b)(4))	Health and safety risk analyses should be established for each task and operation identified in the site-specific workplan. Discussion of these analyses should include identification of chemical contaminants, affected media, concentrations, and potential routes of exposure for use in risk analysis. Should also include safety risk analyses to address anticipated on-site operations and safety problems.
Site Control Measures (29 CFR §1910.120(d))	The site control program in the HASP specifies the procedures that will be used to minimize employee exposure to hazardous substances before cleanup operations commence and during site operations. The program must be developed during the planning stages of a hazardous waste cleanup operation, and must be modified as any new information becomes available. The site control program should include a site map, designation of work zones, site communications, safety work practices, identification of the nearest medical assistance, and description of the "buddy system" for site operations. **Chapter 4** describes the requirements of the site control program.
Employee Training Assignments (29 CFR §1910.120(e))	Training assignments should address the employee's initial health and safety training, annual health and safety refresher training, on-the-job training, supervisory training, and first-aid and CPR training. Employees should not be permitted to participate in or supervise field activities until they have received training commensurate with their responsibilities. **Chapter 3** describes the applicable training requirements in greater detail.
Medical Surveillance (29 CFR §1910.120(f))	The medical surveillance program is required for monitoring the health status of personnel who are potentially exposed to hazardous substances in the field and who wear respirators 30 days or more per year. It must include initial and periodic medical examinations, examination upon termination of employment, and medical recordkeeping. **Chapter 7** describes the medical surveillance requirements specified in HAZWOPER.

EXHIBIT 2-2 (cont'd)
Components of the HASP

Personal Protective Equipment (PPE) (29 CFR §1910.120(g))	The HASP must describe the different PPE ensembles that will be used to address potential hazards during site activities. The HASP should also include or refer to a comprehensive PPE program that addresses site hazards, duration of site activities, limitations of PPE during temperature extremes, PPE selection, maintenance, storage, and decontamination, and training for PPE use, inspection, and monitoring. Such PPE should be used only when engineering controls and work practices are insufficient to adequately protect against exposure. **Chapter 5** discusses PPE requirements in greater detail.
Air and Personnel Monitoring (29 CFR §1910.120(h))	The HASP must describe the employee and air monitoring equipment and environmental sampling techniques and instrumentation that will be used on-site for evaluating potential exposure to contaminants that result from site activities. The monitoring program must include procedures for initial entry monitoring, periodic monitoring, and monitoring of high risk employees. **Chapter 6** discusses monitoring requirements and procedures.
Spill Containment Program (29 CFR §1910.120(j))	The HASP should include any elements of the spill containment program that may be relevant to the site, and should provide procedures to contain and isolate the entire volume of any hazardous substance spilled in the course of a transfer, major spill, or an on-site release.
Confined Space Entry Procedures (29 CFR §1910.120(b)(9))	If confined space entry is anticipated on-site, the HASP should describe procedures for entry into confined space. Such procedures ensure the safety of site personnel who must enter areas where natural ventilation is insufficient to reduce contaminant concentrations. **Chapter 11** presents the requirements for developing confined space entry procedures.
Decontamination Procedures (29 CFR §1910.120(k))	The HASP should include decontamination procedures, both for individuals and equipment on-site and in places where there is a potential for exposure to a hazardous substance. These procedures should explain how to minimize contact with hazardous substances and how to conduct personal and equipment decontamination when leaving a contaminated area. **Chapter 9** presents the requirements for a decontamination program.
Emergency Response Plan (29 CFR §1910.120(l))	The emergency response plan in the HASP must include a description of how anticipated emergencies would be handled at the site and how the risks associated with a response would be minimized. The emergency response plan must be developed and implemented prior to beginning site operations. **Chapter 11** discusses the requirements for an emergency response plan at an uncontrolled hazardous waste site.

EXHIBIT 2-3
Sample HASP Table of Contents for Site "A"

1.0 INTRODUCTION

1.1 Scope and Applicability of the Site Health and Safety Plan
1.2 Visitors

2.0 KEY PERSONNEL/IDENTIFICATION OF HEALTH AND SAFETY PERSONNEL

2.1 Key Personnel
2.2 Site-Specific Health and Safety Personnel
2.3 Organizational Responsibility

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site
3.2 Task-by-Task Risk Analysis

4.0 PERSONNEL TRAINING REQUIREMENTS

4.1 Preassignment and Annual Refresher Training
4.2 Site Supervisors Training
4.3 Training and Briefing Topics

5.0 PERSONAL PROTECTIVE EQUIPMENT TO BE USED

5.1 Levels of Protection
5.2 Level A Personal Protective Equipment
5.3 Level B Personal Protective Equipment
5.4 Level C Personal Protective Equipment
5.5 Level D Personal Protective Equipment
5.6 Reassessment of Protection Program
5.7 Work Mission Duration
5.8 Chemical Resistance and Integrity of Protective Material
5.9.5 SCBA Inspection and Checkout
5.10.1 Inspection

6.0 MEDICAL SURVEILLANCE REQUIREMENTS

6.1 Baseline or Preassignment Monitoring
6.2 Periodic Monitoring
6.3 Site-Specific Medical Monitoring
6.4 Exposure/Injury/Medical Support
6.5 Exit Physical

EPA HASP Version 3.0: This sample HASP Table of Contents reflects specific health and safety considerations for Site "A". Other sites may address different topics in the HASP, subject to site-specific hazards and activities

EXHIBIT 2-3 (cont'd)
Sample HASP Table of Contents for Site "A"

7.0 FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING

7.1 Direct-Reading Monitoring Instruments
7.3.1 Site Air Monitoring and Sampling Program

8.0 SITE CONTROL MEASURES

8.1 Buddy System
8.2 Site Communications Plan
8.3 Work Zone Definition
8.4 Nearest Medical Assistance
8.5 Safe Work Practices
8.6 Emergency Alarm Procedures

9.0 DECONTAMINATION PLAN

9.1 Standard Operating Procedures
9.2 Levels of Decontamination Protection Required for Personnel
9.3 Equipment Decontamination
9.4 Disposition of Decontamination Wastes

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

10.1 Pre-Emergency Planning
10.2 Personnel Roles and Lines of Authority
10.3 Emergency Recognition/Prevention
10.4 Evacuation Routes/Procedures
10.7 Emergency Contact/Notification System
10.8 Emergency Medical Treatment Procedures
10.9 Fire or Explosion
10.10 Spill or Leaks
10.11 Emergency Equipment/Facilities

11.0 CONFINED SPACE ENTRY PROCEDURES

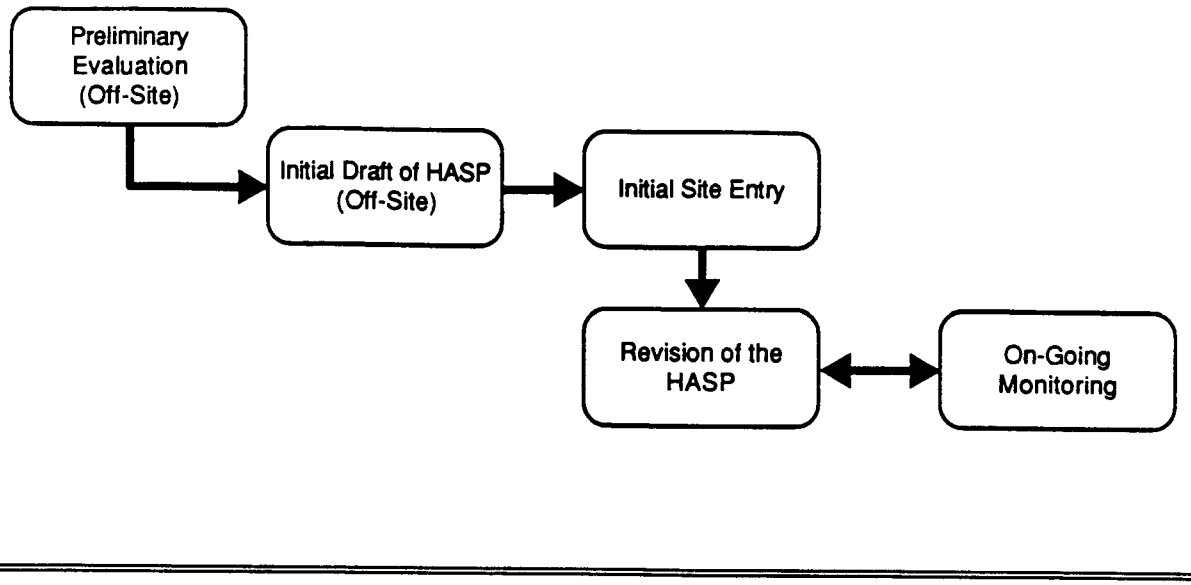
11.1 Definitions
11.2 General Provisions
11.3 Procedure for Confined Space Entry
11.4 Confined Space Observer (Stand-by Person)

12.0 SPILL CONTAINMENT PROGRAM

13.0 HAZARD COMMUNICATION

EPA HASP Version 3.0· This sample HASP Table of Contents reflects specific health and safety considerations for Site "A" Other sites may address different topics in the HASP, subject to site-specific hazards and activities.

EXHIBIT 2-4
The Site Characterization Process



The sections that follow describe the phases of site characterization and HASP development, and provide a general guide that should be adapted to site-specific situations. **Exhibit 2-4** provides a flowchart that illustrates this process. For additional, detailed information on HASP development, see the Environmental Response Team's (ERT) Health and Safety Planner (also referred to as the generic health and safety plan), which is a menu-driven computerized software system designed to assist in the development, implementation, and updating of a HASP.

2.2.1 Preliminary Evaluation

The first step in developing a HASP is to perform a preliminary evaluation (PE) of the site's characteristics. The PE must be accomplished off-site, so as not to endanger the health and safety of site workers. The purpose of the PE is to obtain preliminary information to help identify the specific hazards at the site and determine the appropriate health and safety control procedures (e.g., engineering controls, personal protective equipment (PPE), and any additional medical surveillance needs) that are necessary to ensure the protection of employees who perform tasks on-site.

As set forth in 29 CFR §1910.120(c)(4), the PE should include the following:

- Site location and size.
- Description of response activity and/or the job to be performed.
- Duration of the planned activity.
- Site topography and accessibility.
- Site safety and health hazards expected.
- Pathways for hazardous substance dispersion.
- Present status and capabilities of emergency response teams that would provide assistance for on-site emergencies.
- Hazardous substances and health hazards expected at the site, and the chemical and physical properties of the substances.

There are several ways in which this information can be obtained. For example, records of the site or interviews with persons who are knowledgeable about the site can provide useful information about potential hazards. **Exhibit 2-5** summarizes potentially useful sources of information. **Appendix C** provides a "Sample Incident Safety Check-Off List" to serve as a quick reference on the types of information that must be

EXHIBIT 2-5
Sources of Site-Specific Information

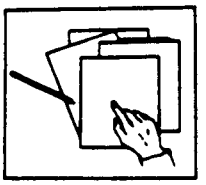
- Company records, receipts, worker compensation claims, logbooks, or ledgers.
- Records and permits from federal and state pollution control regulatory and enforcement agencies, state Attorney General's office, state occupational safety and health agencies, state Fire Marshal's office.
- Interviews with personnel and their families (all interview information should be verified).
- Generator and transporter records.
- Water department and sewage records.
- Interviews with nearby residents (note possible site-related medical problems and verify all information from interviews).
- Local fire and police department records.
- Court and utility company records.
- Verified media reports.
- Previous surveying (including soil, ground-penetrating radar, and magnetometer surveys), sampling, and monitoring data.

obtained prior to initial site entry, and the types of follow-up activities that should be conducted.

In addition to interviewing knowledgeable persons and researching the history of the site, gathering data at the site perimeter (i.e., perimeter reconnaissance) may help in identifying site hazards and potential pathways for exposure and determining the appropriate level of PPE for the initial site entry. To identify the appropriate monitoring techniques for perimeter reconnaissance, the Site Health and Safety Officer should review the information obtained during the records or interview research.

NOTE: Perimeter reconnaissance activities during the PE must be conducted off-site. The site manager must not, *under any circumstances*, allow a worker to enter the site to collect information for the PE.

2.2.2 Writing the Initial Draft of the HASP



Once the PE is completed and the appropriate information has been obtained, the information is used to develop the initial draft of the site-specific HASP. The initial draft of the HASP must include all elements listed in Exhibit 2-2. Specifically, it must identify each anticipated health and safety hazard for each work operation or activity, and describe how those hazards will be eliminated or controlled. It must also indicate that employees have received training and are enrolled in a medical surveillance program. In addition, the HASP should identify appropriate monitoring procedures and PPE for the initial site entry. The HASP must remain on-site at all times and only one HASP should be developed for each site.

2.2.3 Initial Site Entry

Once the HASP has been developed and implemented, the second stage of the site characterization and analysis (i.e., initial site entry) may begin. The purpose of the initial site entry is to gather additional information and further evaluate the site-specific risks and hazards for use in selecting and developing appropriate engineering controls, site controls, medical monitoring plans, and PPE. Risks that should be considered during the initial site entry include:

- Physical hazards.
- Exposure exceeding the permissible exposure limits (PELs) and published exposure levels.
- Immediately dangerous to life and health (IDLH) concentrations.
- Potential skin absorption and irritation.
- Explosion sensitivity and flammability ranges.
- Oxygen deficiency.
- Confined spaces.

At a minimum, activities during the initial site entry should consist of air monitoring and a visual survey for potential hazards. Multi-media sampling should also be performed if the site manager has any reason to believe that soil or water contamination may be present. **Exhibit 2-6**

EXHIBIT 2-6
Initial Site Entry: Visual Inspection Checklist

☑ Note the types of containers, impoundments, or other storage systems:

- -- Paper or wood packages.
- -- Metal or plastic barrels or drums.
- -- Underground tanks.
- -- Aboveground tanks.
- -- Compressed gas cylinders.
- -- Pits, ponds, or lagoons.

☑ Note any tags, labels, markings, or other identifying indicators.

☑ Note the condition of waste containers and storage systems:

- -- Sound (undamaged).
- -- Visibly rusted or corroded.
- -- Leaking or bulging.
- -- Size and type of container.
- -- Labels on containers indicating corrosive, explosive, flammable, radioactive, or toxic materials.

☑ Note the physical condition of the materials:

- -- Gas, liquid, or solid.
- -- Color and turbidity.
- -- Behavior, e.g., corroding, foaming, vaporizing, or crystallizing.
- -- Conditions conducive to splash or contact.

☑ Identify natural wind barriers

- -- Buildings.
- -- Fences.
- -- Vegetation.

☑ Determine the potential pathways of dispersion:

- -- Air.
- -- Biologic routes, such as animals and food chains.
- -- Ground water.
- -- Land surface.
- -- Surface water.

☑ Note any indicators of potential exposure to hazardous substances:

- -- Dead fish, animals or vegetation.
- -- Dust or spray in the air.
- -- Fissures or cracks in solid surfaces that expose deep waste layers.
- -- Pools of liquid.
- -- Gas generation or effervescence.
- -- Deteriorating containers.
- -- Cleared land areas or possible landfilled areas.
- -- Subsiding areas indicating waste burial locations.

☑ Note any safety hazards. Consider:

- -- Conditions of site structures.
- -- Obstacles to entry and exit.
- -- Terrain homogeneity.
- -- Terrain stability.
- -- Stability of stacked material.

☑ Identify any reactive, incompatible, flammable, or highly corrosive wastes.

☑ Note land features.

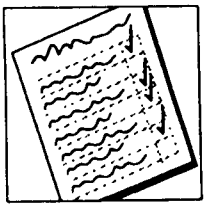
☑ Note the presence of any potential naturally occurring skin irritants or dermatitis-inducing agents, for example:

- -- Poison ivy.
- -- Poison oak
- -- Poison sumac.

☑ Collect samples:

- -- Air (see Chapter 6, Air Monitoring).
- -- Drainage ditches.
- -- Soil (surface and subsurface).
- -- Standing pools of liquids.
- -- Storage containers
- -- Streams and ponds
- -- Ground water (upgradient, beneath site, downgradient).

provides a checklist of conditions and potential hazards that should be noted during the initial site entry. An accurate and comprehensive visual survey of the site will assist the site manager in identifying and determining additional information (e.g., sampling of soil or containers) that may be needed. For example, a visual survey might note the condition of waste containers (e.g., rusted or other unusual conditions) and identify potential exposure pathways.



The specific monitoring requirements for initial site entry are specified at 29 CFR §1910.120(c)(6) and (h)(2) and are summarized in **Exhibit 2-7**. Personnel entering the site should monitor the air using direct reading instruments to detect IDLH conditions (e.g., toxic substances) and for ionizing radiation. Such monitoring, however, need only be conducted if the PE produces information that suggests: (1) the possibility of existing IDLH conditions; or (2) the potential for ionizing radiation. Air monitoring should also be conducted if the information from the PE is insufficient to reasonably conclude that neither of these two conditions exists. When monitoring, entry personnel should look for signs of actual or potential IDLH hazards or other dangerous conditions. Examples of hazards that may be identified at a site include confined space entry, ground subsidence, visible vapor clouds, or areas that contain biological indicators, such as dead vegetation. **Exhibit 2-8** gives examples of frequently used monitoring devices and exposure limits.

The appropriate level of protection for initial entry should be conservative, because there is often little known information on specific hazards at that time. Refer to **Chapter 6** for additional information on selecting appropriate levels of protection.

In addition to air monitoring, soil and water sampling should be performed during the initial site entry if the site manager believes contamination may exist. Soil sampling techniques will differ with each site; for specific sampling strategies, refer to Volume 1 (Soil) of the *Removal Program Representative Sampling Guidance* (Interim Final). Prior to beginning site activities, it is imperative that the purpose of the effort and the ultimate use of the data be established. Specific strategies should be selected based on the information required. **Chapter 6** provides a more detailed discussion of monitoring techniques and equipment.

EXHIBIT 2-7
Specific Monitoring Requirements for Initial Site Entry

As specified in 29 CFR §1910.120(c)(6) and (h)(2), the following monitoring should be conducted at initial site entry:

- Air monitoring with direct-reading instruments for hazardous levels of ionizing radiation.
- Air monitoring with direct-reading test equipment (e.g., combustible gas meters, detector tubes) for IDLH or other dangerous conditions.
- Visual observation for signs of actual or potential IDLH or other dangerous conditions.

One important goal of the initial site entry is to identify the risks and hazards at the site so that the work zones can be established. The three most frequently identified zones are the Exclusion Zone, the Contamination Reduction Zone, and the Support Zone (also known as the clean zone). The Support Zone should be an area of the site that is free from contamination and that may safely be used as a staging area for other hazardous waste operations at the site. The Exclusion Zone is the area with actual or potential contamination and the highest potential for exposure to hazardous substances. For additional information on work zones and site control, refer to **Chapter 4**.

2.2.4 Revising the HASP

Once the initial site entry is completed, the site manager is responsible for updating the HASP to ensure that it adequately identifies any new tasks or hazards at the site. At most sites, any sampling performed during the initial site entry will provide accurate information regarding the appropriate level of PPE to be worn by site employees and the proper designation of work zones.

After the initial site characterization activities have been completed, any information concerning the chemical, physical, and toxicological properties of hazardous substances identified during the initial site entry must be made available to employees prior to the commencement of operations at the site.

2.2.5 On-Going Monitoring

Once the HASP is revised to reflect the information gathered during the initial site entry, on-going monitoring may be needed to ensure that all new hazards are identified in a timely manner and that the appropriate controls are implemented to protect site employees.

EXHIBIT 2-8
Atmospheric Hazard Action Guides

Monitoring Equipment	Atmospheric Hazard[a]	Level	Action
Combustible Gas Indicator	Explosive	< 10% LEL[b]	Continue monitoring with caution.
		10-25% LEL	Continue monitoring, but with extreme caution, especially as higher levels are encountered.
		> 25% LEL	Explosion hazard! Withdraw from area immediately.
Oxygen Level		< 19.5%	Monitor wearing SCBA NOTE: Combustible gas readings not valid in atmospheres with less than 19.5% oxygen.
		19.5-25%	Continue monitoring with caution. SCBA not needed based only on oxygen content.
		> 25%	Discontinue monitoring Fire potential! Consult specialist.
Radiation Survey Instrument	Gamma Radiation	Above background.	Continue monitoring. Consult a health physicist.
		< 1 mR/hr	
		≥ 1 mR/hr	Withdraw. Continue monitoring only upon the advice of a Health Physicist.
Colorimetric Tubes	Organic & inorganic vapors/gases	Depends on chemical	Consult reference manuals for air concentration vs. PEL/TLV and toxicity data.
Photoionization Detector	Organic vapors/gases	Depends on chemical	Consult reference manuals for air concentration vs. PEL/TLV and toxicity data.
Flame Ionization Detector	Organic vapors/gases	Depends on chemical	Consult reference manuals for air concentration vs. PEL/TLV and toxicity data.

[a] NOTE: Hazard classes are general and not all compounds in these classes can be measured by realtime instruments.
[b] LEL = lower explosive limit.

NOTE: The correct interpretation of any instrument readout is difficult. If the instrument operator is uncertain of the significance of a reading, especially if conditions could be unsafe, a technical specialist should immediately be consulted Consideration should be given to withdrawing personnel from the area until approval by the safety officer is given to continue operations.

Periodic monitoring should be conducted whenever there is any indication that exposures have risen above the permissible exposure limits (PELs), when other dangerous conditions exist, such as the presence of flammable atmospheres or oxygen-deficient environments, or when new tasks are initiated or site conditions change. (Refer to **Exhibit 4-4** in **Chapter 4** of this Guide for examples.) Monitoring should be conducted on those employees suspected of having the highest exposures to hazardous substances and health hazards.

FURTHER GUIDANCE: For further information on developing the written health and safety plan and the site-specific HASP, see:

1. *Characterization of Hazardous Waste Sites -- A Methods Manual: Vol.II. Available Sampling Methods, 2nd ed.* (U.S. EPA, 1984, EPA 600/4-84-076).

2. *EPA Health and Safety Planner: Software and User's Guide* (U.S. EPA, 1990, Publication 9285.8-01).

3. *EPA Health and Safety Audit Guidelines* (U.S. EPA, 1989, EPA 540/G-89/010).

4. *Standard Operating Guidelines for Site Entry* (U.S. EPA, 1985, Publication 9285.2-01A).

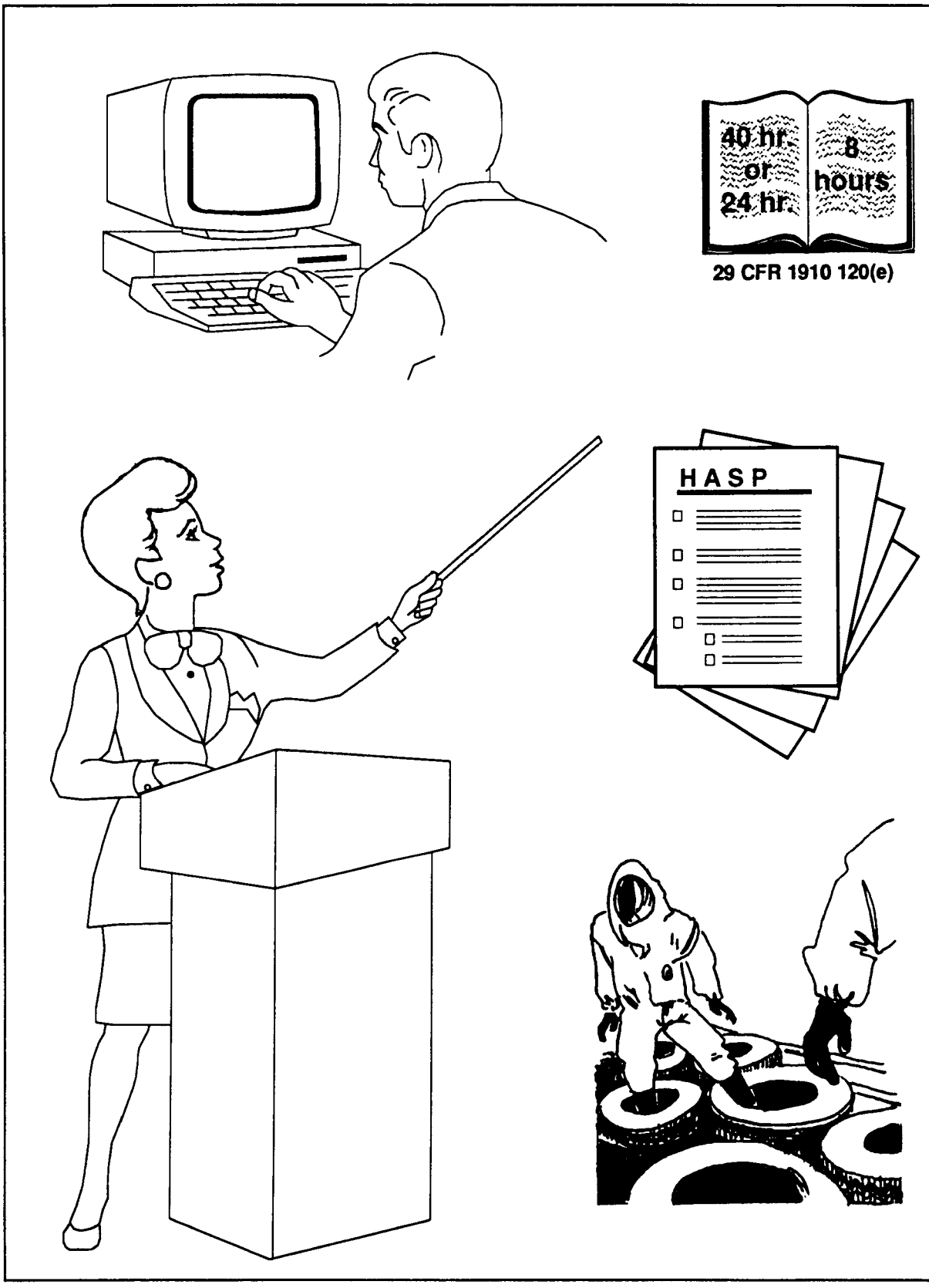
5. *Standard Operating Procedures for Site Safety Planning* (U.S. EPA, 1985, Publication 9285.2-05).

6. *OSWER Integrated Health and Safety Standard Operating Practice* (U.S. EPA, 1992, Publication 9285.0-01).

7. *Hazardous Waste Operations and Emergency Response: Uncontrolled Hazardous Waste Sites and RCRA Corrective Action* (U.S. EPA, 1991, Publication 9285.2-08FS).

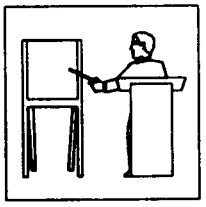
8. *Removal Program Representative Sampling Guidance. Volume 1 - Soil* (Interim Final), (U.S. EPA, 1991, Publication 9360.4-10).

CHAPTER 3 TRAINING



CHAPTER 3 TRAINING

3.0 INTRODUCTION



Health and safety training is an integral part of the total health and safety program. Site response personnel should receive frequent training to maintain proficiency in using safety equipment and knowledge of site safety practices. Personnel who work at hazardous waste sites must recognize and understand the potential hazards to health and safety associated with the cleanup of that site. Personnel actively engaged in cleanup activities must be familiar with the safety programs and procedures at the site, including the HASP and site control measures, and must be trained to work safely in contaminated areas. Employees may not participate in or supervise any site activity until they have been properly trained.

The objectives of the HAZWOPER training program for employees engaged in hazardous waste site activities are to:

- Educate workers about the potential health and safety hazards they may encounter at the site;
- Provide the knowledge and skills necessary to minimize risk to worker health and safety;
- Provide thorough training in the proper use and potential limitations of safety and PPE; and
- Ensure that workers can safely avoid or escape from emergencies.

The HAZWOPER standards at 29 CFR §1910.120(e) reflect a tiered approach to training. They link the amount and type of training required to an employee's potential for exposure to hazardous substances and other health hazards encountered during hazardous waste operations. The greater the potential hazard to an employee, the more extensive and stringent are the training requirements. The training program should involve both classroom instruction in a wide range of health and safety topics, demonstrations, and "hands-on" practice consisting of off-site drills that simulate site activities and conditions. Any training program for work around hazardous substances should also incorporate on-site experience under the direct supervision of trained, experienced personnel. All employees are required to complete refresher training, at least annually, to re-emphasize the initial training and to update workers on any new policies or procedures.

3.1 TRAINING REQUIREMENTS

3.1.1 General Training Requirements

HAZWOPER outlines a specific set of training criteria based upon a given employee's position, duties, and experience. The intent of the training provisions is to provide employees with the knowledge and skills necessary to perform hazardous waste cleanup operations with minimal risk to their safety and health.

The rule requires that all on-site employees who are exposed, or potentially exposed, to hazardous substances, health hazards, or safety hazards receive training meeting specific requirements before they are permitted to engage in hazardous waste operations. This rule also applies to site supervisors and personnel responsible for health and safety at the site. Employees should not be permitted to participate in or supervise field activities until they have been trained to a level commensurate with their job function and responsibility.

The HAZWOPER standards specify hourly requirements for five different categories of site workers. These hourly training requirements, and the requirements for each category, are discussed in more detail in Section 3.2.

3.1.2 Site-Specific Requirements

Each employer at a site is responsible for ensuring that their respective employees are properly trained and equipped prior to commencing work. HAZWOPER training must enable site workers to identify the hazards present on-site, the medical surveillance requirements,

certain elements of the HASP, and operating practices and procedures, including the use of PPE and proper engineering controls. **Exhibit 3-1** outlines the specific issues and topics that are required to be addressed during training.

EXHIBIT 3-1
Elements to be Covered in Training

29 CFR §1910.120(e)(2) requires that health and safety training ensure that employees are thoroughly familiar with the following information:

- Names of personnel and alternates responsible for site safety and health;
- Safety, health, and other hazards present on site;
- Use of personal protective equipment;
- Work practices by which the employee can minimize risks from hazards;
- Safe use of engineering controls and equipment on the site;
- Medical surveillance techniques, and recognition of symptoms and signs that might indicate overexposure to hazards;
- An emergency response plan meeting the requirements for safe and effective responses to emergencies, including all necessary equipment;
- Confined space entry procedures;
- A spill containment program; and
- Decontamination procedures.

It is also recommended that training cover the following:

- Proper use of field equipment; and
- Employee rights and responsibilities.
- First Aid.

3.2 INITIAL TRAINING REQUIREMENTS FOR FIELD PERSONNEL

Although all employees engaged in hazardous waste operations must receive training in health and safety, the type of training required depends on the employee's on-site activities and potential for exposure to hazardous substances. **Exhibit 3-2** summarizes the HAZWOPER hourly training requirements for five categories of site workers. **Exhibit 3-3** provides a matrix of training requirements for site personnel.

General site workers (e.g., equipment operators, general laborers, and supervisory personnel) engaged in hazardous substance removal or other activities that potentially expose workers to hazardous substances and health hazards are required to receive at least 40 hours of off-site instruction, as well as a minimum of 3 days actual field experience under the direct supervision of a trained, experienced supervisor.

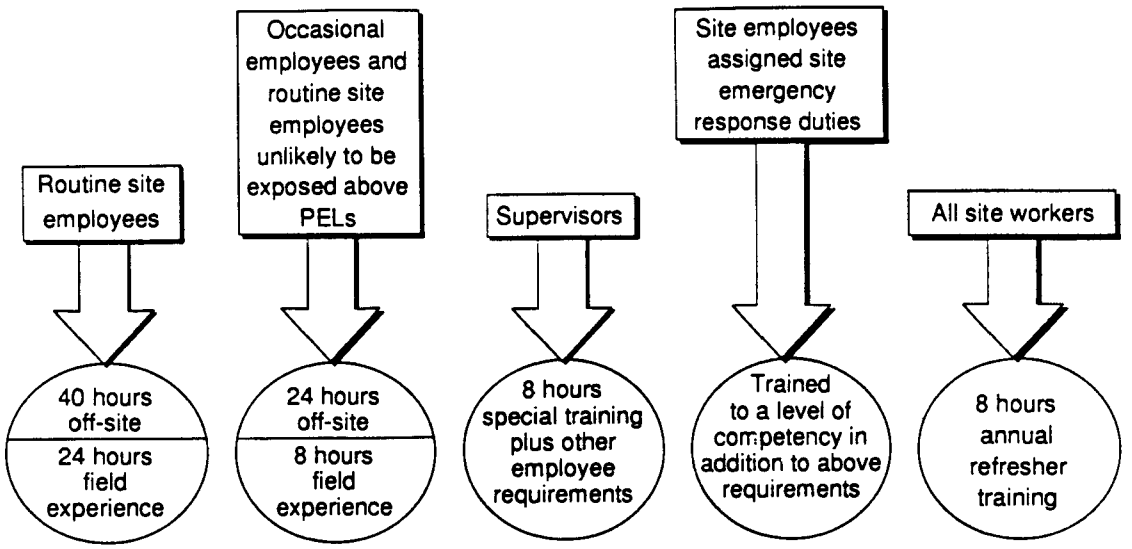
Workers who are on-site only occasionally to perform a specific limited task (e.g., ground-water monitoring or land surveying) and who are unlikely to be exposed to hazardous substances over their PELs, are required to have a minimum of 24 hours of instruction off-site and a minimum of 8 hours of supervised field experience.

Workers regularly on-site who work in areas where exposure levels are monitored and determined to be below PELs, and where no health or atmospheric hazards are posed, must receive 24 hours of off-site instruction and a minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

Workers with 24 hours of training who subsequently become general site workers or whose job requires that a respirator be worn are required to obtain the additional 16 hours and 2 days of training to fulfill the training requirements commensurate with the new position's responsibilities.

Managers and supervisors of the four groups of employees described above are required to receive the same amount of initial training and field experience as the employees they supervise, plus 8 additional hours of specialized training in managing hazardous waste operations. For example, a supervisor that only manages employees who work on-site occasionally must have a minimum of 24 hours of instruction off-site and 8 hours of supervised field experience, plus an additional 8 hours of specialized management training. Supervisors will need to be trained in their responsibilities under the health and safety

EXHIBIT 3-2
Initial Training Requirements for Employees at Uncontrolled Hazardous Waste Sites (29 CFR §1910.120(e))



program, the PPE program, the medical surveillance program, and the emergency response plan.

Visitors to the site are not required to have completed any specific training in health and safety, although it is strongly recommended that they be familiar with the hazards on-site as well as PPE, decontamination procedures, and the site emergency plan. Site visitors **may not** enter any hazardous area (e.g., exclusion or decontamination zones) without the proper training.

Although there are no specific training requirements for **on-site** employees with emergency response duties for that site, such employees must be trained commensurate with the duties that will be assumed.

3.3 EQUIVALENT AND REFRESHER TRAINING

Some of the training requirements specified above may be waived if the employee has had prior work experience or training. For example, certain training requirements may be waived if the employee has had experience working at an uncontrolled hazardous waste site or if the employee has participated in training courses offered by independent or federal organizations (e.g., EPA). If the employer believes that an employee has sufficient prior experience or training to waive some or all of the HAZWOPER training requirements, the employer must document the basis for this belief, describing the length and type of experience or training. Equivalent training may include any relevant academic training or the training that may have been gained from actual hazardous waste site work experience. Certified employees new to a site, however, must receive appropriate site-specific training before site entry.

All employees who perform cleanup operations at uncontrolled hazardous waste sites, including managers and supervisors, must receive a minimum of 8 hours of annual refresher training. The purpose of refresher training is to maintain certain competencies essential for ensuring a safe work environment. Attendance at applicable seminars and critiques of actual responses are also acceptable methods of satisfying the annual refresher training requirements. Proper documentation of attendance should be maintained in each employee's personnel file to confirm that every

EXHIBIT 3-3
Recommended Training by Job Category

TRAINING TOPIC	EMPHASIS OF TRAINING	General Site Worker	On-site Management & Supervisors	Health & Safety Staff
Biology, Chemistry, and Physics of Hazardous Materials	Chemical and physical properties; chemical reactions; chemical compatibilities.	✓	✓	✓
Toxicology	Dosage, exposure routes, toxicity, IDLH values, PELs, recommended exposure limits (RELs), TLVs.	✓	✓	✓
Industrial Hygiene	Monitoring workers' need for and selection of PPE.	O	✓	✓
	Calculation of doses and exposure levels; hazard evaluation; selection of worker health and safety protective measures.	O	✓	✓
Monitoring Equipment	Selection, use, capabilities, limitations, and maintenance.	✓	✓	✓
Hazard Evaluation/Recognition	Techniques of sampling and assessment.	✓	✓	✓
	Evaluation of field and lab results.	O	✓	✓
	Chemical/Physical	✓	✓	✓
	Risk assessment.		O	✓
Site Safety Plan	Safe practices, safety briefings and meetings, Standard Operating Procedures, site safety map.	✓	✓	✓
Standard Operating Procedures	Hands-on practice.	✓	✓	✓
	Development and compliance.	O	✓	✓
Engineering Controls	The use of barriers, isolation, and distance to minimize hazards.	✓	✓	✓
Personal Protective Clothing and Equipment (PPE)	Assignment, sizing, fit-testing, maintenance, use, limitations, and hands-on training.	✓	✓	✓
	Selection of PPE.	✓	✓	✓
Medical Program	Medical monitoring, first aid, stress recognition.	✓	✓	✓
	CPR and emergencies drills.	O	✓	✓
	Design and planning.		O	✓
	Implementation.	✓	✓	✓
Decontamination	Hands-on training using simulated field conditions.	✓	✓	✓
	Design and maintenance.	✓	✓	✓
Legal and Regulatory Aspects	Applicable safety and health regulations (OSHA, EPA)	O	✓	✓
Emergencies/Accidents	Emergency help, self-rescue, drills, alarms, reporting.	✓	✓	✓
	Emergency response, investigation and documentation.	O	✓	✓
Hazard Communication	Per 29 CFR §1910.200 and §1926.59 (as applicable)	✓	✓	✓
Employee Rights		✓	✓	✓

✓ = Recommended training O = Optional

person assigned to a task has had adequate training for that task, and that each employee has participated in refresher training activities.

3.4 TRAINER QUALIFICATIONS AND CERTIFICATION

Trainers must be adequately qualified to instruct employees about the subject matter that is being presented in training. Such trainers must satisfactorily complete a training program for teaching the subjects they are expected to teach, or they must have the academic credentials and instructional experience necessary for teaching the subjects. Instructors are required to demonstrate competent instructional skills and knowledge of the applicable subject matter.

Employees and supervisors who have received and successfully completed the required training and field experience must be certified by their instructor or trained supervisor as having successfully completed the necessary training. A written certificate must be given to each person as proof of his or her certification (although certification may only signify attendance, and not competency). Any person who has not been certified or who does not meet the requirements may not participate in hazardous waste operations at the site.

FURTHER GUIDANCE: For more information on employee training requirements and programs, see:

1. *Hazardous Materials Incident Response Training (HMIRT) Program: Course Schedule.*
   Write to: U.S. EPA/ERT, 26 West Martin Luther King, Cincinnati, OH 45268
   or Call: (513) 569-7537 or FTS 684-7537

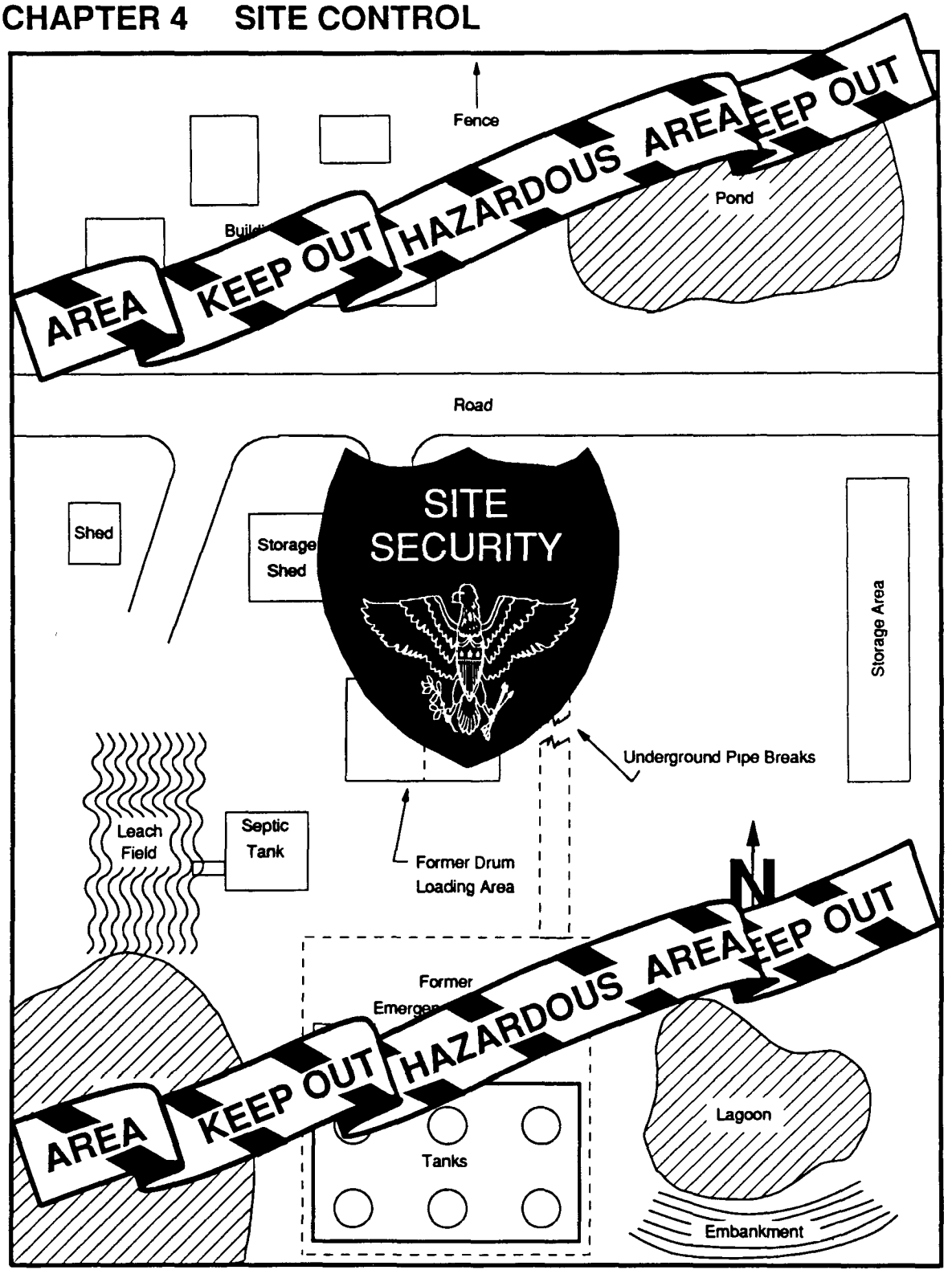
   The HMIRT program is designed for emergency responders and personnel who investigate and clean up uncontrolled hazardous waste sites. The HMIRT program has a curriculum of 12 courses that provide specific training in worker health and safety and in various technical operations that must be performed by site personnel engaged in hazardous materials response activities.

2. *National Institute for Environmental Health Sciences (NIEHS) Worker Health and Safety Training Programs.* Write to: The National Clearinghouse on Occupational and Environmental Health, c/o Workplace Health Fund, 815 16th Street NW, Suite 301, Washington DC, 20006
   or Call: (202) 842-7833

   The National Clearinghouse, established by NIEHS, provides information and support services for occupational and environmental health education. The Clearinghouse can provide information about training programs across the country funded by NIEHS Federal training grants.

3. *National Institute for Environmental Health Sciences (NIEHS) Training Grant Program*, Technical Workshop on Training Quality Report: Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response (1990).

4. "Accreditation of Training Programs for Hazardous Waste Operations," Proposed Standard, (55 FR 2776, January 26, 1990).


Fence
KEEP OUT HAZARDOUS AREA KEEP OUT
AREA
Pond
Road
SITE SECURITY
Shed
Storage Shed
Storage Area
Underground Pipe Breaks
Leach Field
Septic Tank
Former Drum Loading Area
N
Former
KEEP OUT HAZARDOUS AREA KEEP OUT
AREA
Lagoon
Tanks
Embankment

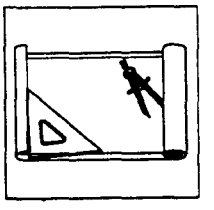
CHAPTER 4 SITE CONTROL

4.0 INTRODUCTION

As an essential element of the HASP, the site control program is used to control the activities and movement of people and equipment at hazardous waste sites in order to minimize the potential for worker exposure to hazardous substances. The provisions at 29 CFR §1910.120(d) require that an appropriate site control program be developed prior to the implementation of response operations. Although the degree of site control necessary for the protection of workers depends largely on site-specific characteristics (e.g., site size, nature of contamination, etc.), 29 CFR §1910.120(d)(3) identifies some essential elements of an effective site control program. These elements are highlighted in **Exhibit 4-1.**

The site control program should be established during the planning stages of a hazardous waste operation. It should be modified as new information becomes available, perhaps as a result of the initial site entry or subsequent site assessments. The appropriate sequence for implementing site control measures should be determined on a site-specific basis; however, it may be necessary to implement several measures concurrently. The remainder of this chapter provides more detail of each of the basic components of a site control program.

4.1 DEVELOPMENT OF THE SITE MAP



As part of the site control program, a map of the hazardous waste site should be developed. The site map represents a central source of information about the site, including the geographic layout and the hazards present at the site. The purpose of the site map is to assist site personnel in planning and organizing response activities. **Exhibit 4-2** presents an example of a site map.

The site map should be developed prior to the initial site entry using information obtained during the preliminary evaluation. The map should include the following information: prevailing wind direction, site drainage points, all natural and man-made topographic features including the location of buildings, containers, impoundments, pits, ponds, tanks, and any other site features. Site maps should be updated often during the course of site operations to reflect:

- New information, such as information gained after initial site entry or from subsequent sampling and analysis activities; or

EXHIBIT 4-1

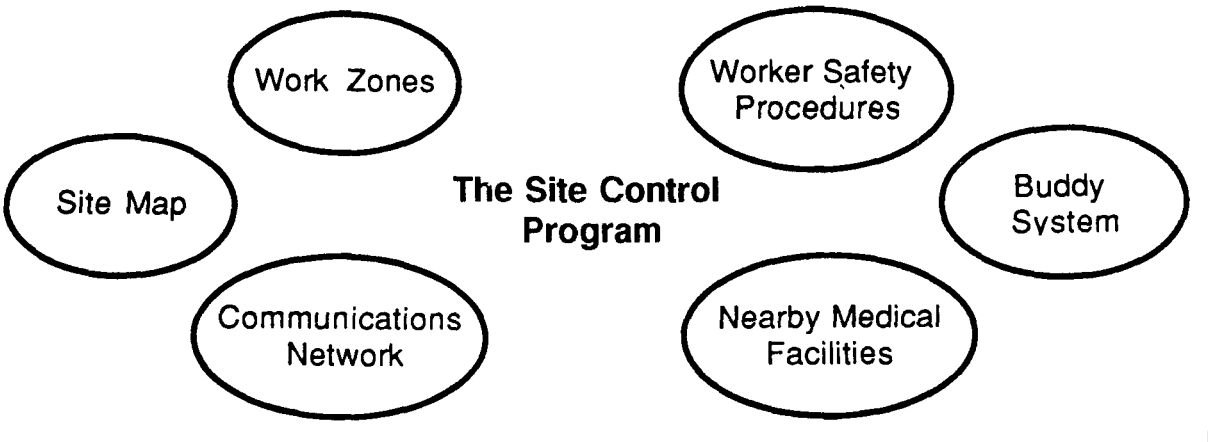
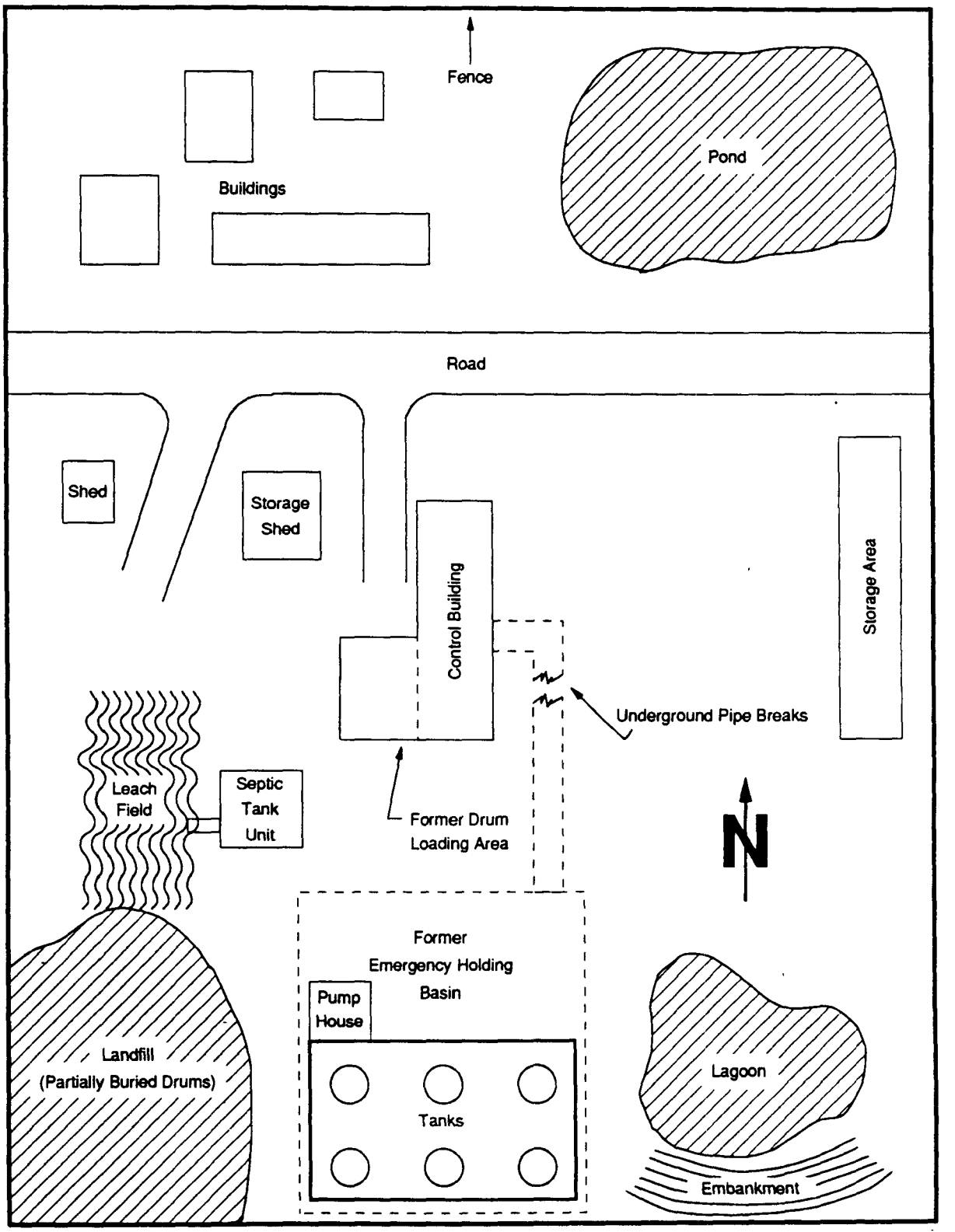


EXHIBIT 4-2
Sample Site Map



- Changes in site conditions, including changes resulting from accidents, ongoing site operations, hazards not previously identified, new materials introduced on-site, unauthorized entry or vandalism, or weather conditions.

As new information is added to the site map, use of overlays and other mapping techniques may reduce the potential cluttering of information.

4.2 ESTABLISHMENT OF WORK ZONES AT THE SITE

One of the basic elements of an effective site control program is the delineation of work zones at the site. This delineation specifies the type of operations that will occur in each zone, the degree of hazard at different locations within the site, and the areas at the site that should be avoided by unauthorized or unprotected employees. Specifically, the purpose of establishing work zones is to:

- Reduce the accidental spread of hazardous substances by workers or equipment from the contaminated areas to the clean areas;
- Confine work activities to the appropriate areas, thereby minimizing the likelihood of accidental exposure; and
- Facilitate the location and evacuation of personnel in case of an emergency.

When establishing the work zones at a site, information from on-site and off-site data collection efforts should be compiled in a format that facilitates a decision concerning the placement of work zones. The site map, as discussed above, can provide a useful format for compiling the relevant data. The locations of all potential hazards that were identified through the interview/records research, the perimeter reconnaissance, and the initial on-site survey should be plotted on the site map. The site map should also indicate both observed and suspected hazards, on- and off-site air and soil sampling results, and potential exposure pathways. It is important to remember that the absence of sampling results should not be considered evidence that an area is clean.

Although a site may be divided into as many zones as necessary to ensure minimal employee exposure to hazardous substances, the three most frequently identified zones are the Exclusion Zone (or "hot zone"), the Contamination Reduction Zone (CRZ), and the Support Zone (or "clean zone"). Movement of personnel and equipment between these zones should be minimized and restricted to specific access control points to prevent cross-contamination from contaminated areas to clean areas. **Exhibit 4-3** illustrates the three most commonly designated work zones. A description of each work zone, and the factors to be considered when establishing them, are provided below.

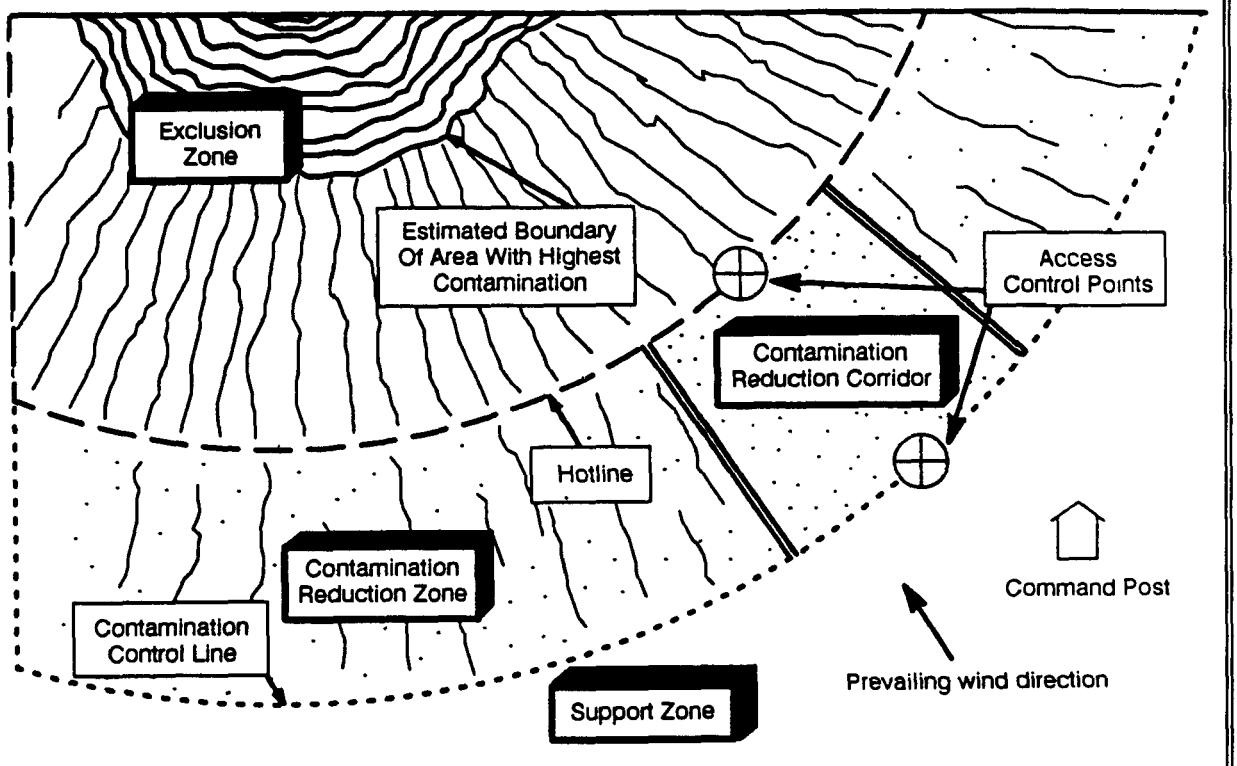
4.2.1 The Exclusion Zone

The Exclusion Zone is the area where contamination is either known or expected to occur and the greatest potential for exposure exists. The outer boundary of the Exclusion Zone, called the Hotline, separates the area of contamination from the rest of the site. The Hotline should initially be established by visually surveying the site and determining the areal extent of hazardous substances, discoloration, or any drainage, leachate, or spilled material present. Other factors to consider in establishing the Hotline include:

- Providing sufficient space to protect personnel outside the zone from potential fire or explosion;
- Allowing an adequate area in which to conduct site operations; and
- Reducing the potential for contaminant migration.

The Hotline should be physically secured (e.g., using chains, fences, or ropes) or clearly marked (e.g., using lines, placards, hazard tape, and/or signs). During subsequent site operations, the boundary may be modified and adjusted as more information becomes available. In addition, the Exclusion Zone may also be subdivided into different areas of contamination based on the known or expected type and degree of hazards or the incompatibility of waste streams. If the Exclu-

EXHIBIT 4-3
Illustration of Typical Work Zones



Note: Area dimensions not to scale. Distances between points may vary.

sion Zone is subdivided in this manner, additional demarcations (e.g., "Hazards Present" or "Protection Required") may be necessary.

Access to and from the Exclusion Zone should be restricted to Access Control Points at the Hotline. Access Control Points are used to regulate the flow of personnel and equipment into and out of the contamination area and to verify that site control procedures are followed. Separate entrances and exits should be established to separate personnel and equipment movement into and out of the Exclusion Zone. If the Exclusion Zone is subdivided, additional Access Control Points may be necessary to ensure minimal employee exposure.

All persons who enter the Exclusion Zone must wear the appropriate level of PPE for the degree and types of hazards present at the site. If the Exclusion Zone is subdivided, different levels of PPE may be appropriate (see **Chapter 5** for more information on PPE). Each subarea of the Exclusion Zone should be clearly marked to identify the hazards and the required level of PPE.

4.2.2 The Contamination Reduction Zone (CRZ)

As the transition area between the Exclusion Zone ("hot zone") and the Support Zone ("clean zone"), the CRZ is the area in which decontamination procedures take place. The purpose of the CRZ is to reduce the possibility that the Support Zone will become contaminated or affected by the site hazards. Because of both distance and decontamination procedures, the degree of contamination in the CRZ generally will decrease as one moves from the Hotline to the Support Zone.

Initially, the CRZ should be established outside the areas of contamination. Contamination Reduction Corridors, which are Access

Control Points between the Exclusion Zone and the CRZ, should be established for both personnel and heavy equipment. These corridors should consist of an appropriate number of decontamination stations necessary to address the contaminants at a particular site (see **Chapter 9** for more information on decontamination procedures). In some cases, the scale of response operations may require more than two Contamination Reduction Corridors.

The Contamination Control Line marks the boundary between the CRZ and the Support Zone and separates the clean areas of the site from those areas used to decontaminate workers and equipment (i.e., partially contaminated areas). Access Control Points between the CRZ and the Support Zone must be established to ensure that workers entering the CRZ are wearing the proper PPE and that workers exiting the CRZ to the Support Zone remove all potentially contaminated PPE.

4.2.3 The Support Zone

The Support Zone is the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. The Support Zone is the appropriate location for the command post, medical station, equipment and supply center, field laboratory, and any other administrative or support functions that are necessary to keep site operations running efficiently. Because the Support Zone is free from contamination, personnel working within it may wear normal work clothes, and access to and from the area is not restricted to authorized site personnel. Any potentially contaminated clothing, equipment, and samples must remain outside of the Support Zone until decontaminated. However, all personnel located in the Support Zone must receive instruction in the proper evacuation procedures in case of a hazardous substance emergency.

Designation of the Support Zone should be based on all available site characterization data. One of the most important criteria for the selection of the Support Zone is that it must be located in a clean area. That is, the Support Zone should be in an area that is known to be free of elevated (i.e., higher than background) concentrations of hazardous substances. Monitoring should be conducted to confirm that the area considered for the Support Zone does not contain concentrations of hazardous substances that pose health risks (see **Chapter 6** for details on air monitoring procedures). When evaluating on-site concentrations of hazardous substances, it is important to consider the background concentrations of these substances in the area. In some cases, non-zero (low-level) background concentrations of hazardous substances may be encountered.

The size and position of the Support Zone may be directly affected by the size of the exclusion and contamination reduction zones. For example, the Support Zone may be constrained by the distances needed to prevent an explosion or fire from affecting personnel outside the Exclusion Zone, or the physical area required for activities within the Exclusion Zone. In addition, the Support Zone should be upwind and as far from the Exclusion Zone as practicable. Whenever possible, line-of-sight contact with all activities in the Exclusion Zone should be maintained, and accessibility to support services (e.g., power lines, access roads, telephones, shelter, and water) should be maximized. The expected duration of response operations may also affect the placement of work zones.

4.2.4 Ensuring Integrity of the Support Zone

It is conceivable that the Support Zone may inadvertently become contaminated after site remediation begins. For example, changes in wind speed and direction, temperature, and rainfall may result in exposures different from those experienced during the initial on-site survey. Therefore, the integrity of the Support Zone should be reconfirmed during response operations.

Several procedures can be used to ensure that the area chosen for the Support Zone remains clean during removal or remedial operations. First, the strict use of site controls will minimize the transfer of contamination to the Support Zone. In addition, periodic monitoring of the Support Zone will indicate whether changes in site activities or conditions have resulted in contamination. In the event that contamination has occurred, the boundaries of work zones should be reevaluated and, if appropriate, realigned. Procedures used to maintain work zone integrity are described below.

Use of Site Controls. The CRZ is designed to reduce the probability that the clean Support Zone will become contaminated or affected by other site hazards. The distance between the Exclusion and Support Zones provided by the CRZ, together with decontamination of workers and equipment, limits the physical transfer of hazardous substances into clean areas. The Contamination Control Line, which separates the Support Zone from areas of potential contamination, should include two Access Control Points, if feasible: one for personnel and one for equipment. Persons entering the CRZ should be required to wear PPE appropriate for the types and degree of hazards they may encounter when working in this area. To re-enter the Support Zone from the CRZ, workers should remove gross contamination, remove any protective clothing, leave equipment in the CRZ, and exit through the personnel Access Control Point.

Periodic Monitoring of Support Zone. A monitoring and sampling program for the Support Zone should be established to ensure that this area remains free from contamination. Monitoring should take place on a routine basis and whenever exposure is likely to have changed. The monitoring and sampling activities that may be conducted periodically to ensure that the Support Zone remains clean include:

- Air monitoring using direct-reading instruments.
- Collecting air samples for particulate, gas, and vapor analysis.
- Analysis of soil samples from areas of heavy traffic.
- Swipe tests in trailers and other areas used by personnel.

Increased concentrations of hazardous substances in air, soil, or other environmental media may indicate a breakdown in site control procedures or a change in on-site conditions. Site personnel should be constantly alert to changes in site conditions or the presence of any potentially dangerous situations. Certain site activities may increase the potential for exposure to hazardous substances and, therefore, may indicate a need for additional monitoring. These situations are listed in **Exhibit 4-4**.

EXHIBIT 4-4
Additional Monitoring Requirements
(29 CFR §1910.120(h)(3))

As specified in 29 CFR §1910.120(h)(3), situations where additional monitoring may be appropriate include:

- When work begins on a different portion of the site;
- When contaminants other than those previously identified are being handled;
- When a different type of operation begins (e.g., drum opening as opposed to exploratory well drilling); and
- When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon).

Additional Site Characterization Information. Additional information concerning locations of contaminated environmental media may become available during monitoring or in the later stages of site investigation and cleanup, particularly for remedial actions. For example, more detailed soil sampling will likely occur during the site inspection and remedial investigation. This additional information may indicate that areas initially thought to be clean are, in fact, contaminated. The location of the Support Zone should be re-evaluated whenever new site characterization studies are conducted.

4.3 ORGANIZATION OF WORKERS USING THE BUDDY SYSTEM

When carrying out activities in the Exclusion Zone, workers should use the buddy system to ensure that rapid assistance can be provided in the event of an emergency. The buddy system is an approach used to organize workers into workgroups so that each worker is designated to be observed by at least one other worker. During initial site entry, it may be appropriate to utilize a buddy system in which two workers are assigned to provide safety backup.

The site manager, who is responsible for enforcing the buddy system, should implement the system at the Access Control Point for personnel entering the Exclusion Zone. This location represents the most logical point to enforce the buddy system as the Site Manager is stationed in the CRZ and all personnel who enter the contaminated area are required to pass through the Access Control Point.

As part of the buddy system, workers should remain close together and maintain visual contact with each other to provide assistance in the event of an emergency. Should an emergency situation arise, workers should use the communication signals established and agreed upon prior to entering the contaminated area (see Section 4.4 below). In general, the responsibilities of workers utilizing the buddy system include:

- Providing his or her partner with assistance;
- Observing his or her partner for signs of chemical or heat exposure;
- Periodically checking the integrity of his or her partner's personal protective equipment; and
- Notifying the site manager or other site personnel if emergency assistance is needed.

Workers should not rely entirely on the buddy system to ensure that help will be provided in the event of an emergency. To augment this system, workers in contaminated areas should remain in line-of-sight or communication contact with the command post or site manager at all times.

4.4 ESTABLISHMENT OF A COMMUNICATION NETWORK AND PROCEDURES

Communication systems should be established at a site for both internal and external communication. Internal communication refers to communication between workers operating in the Exclusion Zone or CRZ, or to communication from the Command Post to these workers. Internal communication is generally used to:

- Alert team members to emergency situations;
- Convey safety information (e.g., air time remaining in SCBA, heat stress check, hazards detected);
- Communicate changes in the work to be accomplished; and
- Maintain site control.

An internal communication system may be established using standard communication devices such as radio, noisemakers, or visual signals (**Exhibit 4-5** lists several common internal communications devices). All communication devices used in a potentially explosive atmosphere must be intrinsically safe (i.e., not capable of sparking) and should be checked daily to ensure that they are operating properly. Because verbal communication at a site can be difficult as a result of on-site background noise and the use of PPE (e.g., speech transmission through a respirator can be poor), pre-arranged commands and audio or visual cues should be developed prior to entering the Exclusion Zone. A secondary set of non-verbal signals should be established for use when communication devices fail or when emergency situations occur (see **Chapter 11** for procedures on communication during emergency situations).

EXHIBIT 4-5
Examples of
Internal Communication Devices

- **Radio**, including FM and Citizens Band;
- **Noisemakers**, including bells, compressed air horns, megaphones, sirens, or whistles; and
- **Visual Signals**, including flags, flare or smoke (only used in the Support Zone), hand signals, lights, signal boards, and whole body movements.

Effective internal communication also requires the identification of individual workers so that commands can be addressed to the right worker. The worker's name should be marked on

the suit and, for long-distance identification, color coding, numbers, or symbols can be added. Flags may be used to help locate personnel in areas where visibility is poor due to obstructions such as accumulated drums, equipment, or waste piles.

External communication refers to communication between on-site and off-site personnel. An external communication system must be maintained in order to: (1) coordinate emergency response efforts with off-site responders; (2) report progress or problems to management; and (3) maintain contact with essential off-site personnel. The primary means of external communication are telephone and radio. If telephone lines are not installed at a site, all team members should know the location of the nearest telephone to the site, and the correct change and necessary telephone numbers should be made readily available in the Support Zone. If a radio is used, its location should be clearly marked. Clear instructions for its use should be posted with the radio at all times.

4.5 WORKER SAFETY PROCEDURES

As part of the site control plan, procedures must be established to ensure worker safety. Worker safety procedures include preparation of the site for response activities, engineering controls and safe work practices, and other standing orders to be followed at all times during site operations. Worker safety procedures should be prepared by certified safety professionals in advance of on-site response operations. These procedures should be made available to workers involved in site activities. All workers should be briefed frequently on their use.

4.5.1 Site Preparation

Prior to undertaking response activities, time and effort must be spent in preparing a site for clean-up activities to ensure that response operations go smoothly and that worker safety is ensured. Because site preparation can be as hazardous as site cleanup, personnel should place high priority on safety measures at this stage of site operations. Prior to undertaking on-site response operations, the following site preparation activities should be performed:

- Construct roadways to provide a sound roadbed for heavy equipment and vehicles and arrange traffic patterns to provide ease of access and to ensure safe and efficient operations;
- Eliminate physical hazards from the site to the greatest extent possible, including:
  - ignition sources in flammable hazard areas;
  - exposed or ungrounded wiring, and low overhead wiring that may entangle equipment;
  - sharp or protruding edges (e.g., glass, nails, torn metal, etc.) that may puncture protective clothing and equipment or inflict puncture wounds;
  - debris, holes, loose steps or flooring, protruding objects, slippery surfaces, or unsecured railings, that can cause falls, slips, or trips, or obstruct visibility;
  - unsecured objects, such as bricks and gas cylinders near the edge of elevated surfaces such as catwalks, roof tops, and scaffolding, that may dislodge and fall on workers;
- Install skid-resistant strips and other anti-skid devices on slippery surfaces;
- Construct operation pads for mobile facilities and temporary structures, loading docks, processing and staging areas, and decontamination pads;
- Provide adequate illumination for work activities. Equip temporary lights with protective guards to prevent accidental contact; and
- Install wiring and electrical equipment in accordance with the National Fire Code.

4.5.2 Engineering Controls and Safe Work Practices

Engineering controls and safe work practices must be specified in the site control program to protect employees from exposure to hazardous substances and other safety and health hazards. Engineering controls and safe work practices

should be implemented to reduce and maintain employee exposure levels at or below the permissible exposure levels (PELs) and published exposure levels for those hazardous substances at the site. Examples of engineering controls that may be used include pressurized cabins or control booths on equipment. Safe work practices include such activities as removing nonessential personnel from potential exposure during drum openings, wetting down dusty operations, and locating employees upwind of potential hazards. If, for whatever reason, it is not possible to maintain employee exposure to levels at or below PELs, technical assistance should be obtained before proceeding with site activities (e.g., consult EPA's Environmental Response Team (ERT) or OSHA).

Use of PPE should be a last resort to protect employees against possible exposure to hazardous substances. It should be used only when engineering controls and safe work practices are insufficient to adequately protect against exposure. The PPE used at a site must reflect the potential on-site hazards identified during the PE and site characterization (see **Chapter 5** for detailed information on using PPE).

4.5.3 Standing Orders

Standing orders should be established at a site to maintain a strong safety awareness and to enforce safe work practices. These orders typically are developed for the Exclusion Zone. If the hazards are sufficiently different, standing orders should be developed for the CRZ as well. Standing orders refer to those safety procedures that must always be followed when operating in contaminated areas. Examples of standing orders are provided in **Exhibit 4-6.**

To ensure that all workers are informed of the standing orders, they should be: (1) distributed to everyone who enters the site; and (2) posted conspicuously at the Command Post and at the entrance Access Control Points into the CRZ and/or the Exclusion Zone. In addition, the site manager should review the standing orders at each daily safety briefing and workers should be informed immediately of any new or revised procedures.

EXHIBIT 4-6
Examples of Standing Orders

- Report any signs of radioactivity, explosivity, or unusual conditions to your supervisor immediately
- No Smoking, Eating, Drinking, or Open Flame in the Exclusion Zone or Contamination Reduction Zone
- Check in at the entrance Access Control Point before entering the Exclusion Zone
- Always wear SCBA while in the Exclusion Zone
- Maintain close contact with your buddy in the Exclusion Zone
- Check out at the exit Access Control Point before leaving the Exclusion Zone

In addition to the procedures identified in the standing orders, a hazardous substance information form should be developed that lists the names and properties of all hazardous substances present at the site. This information should be conspicuously posted along with the standing orders. Finally, workers should be briefed on the site's hazardous substances when they first join the response team and when new substances are identified on-site.

4.6 IDENTIFICATION OF NEAREST MEDICAL ASSISTANCE

As part of the site control program, the site manager must post the identification and location of the nearest medical facilities where response personnel can receive assistance in the event of an emergency. Medical facilities typically include area hospitals, emergency clinics, on-call physicians, medical specialists, or emergency, ambulance, fire, and police services. Information to be maintained on the medical facilities should include the names, phone numbers, addresses, and procedures for contacting the facilities. Maps and directions to the medical facilities should also be provided. This information should be posted conspicuously throughout the site, as well as near telephones or other external communication devices. Furthermore, all managers and individuals likely to become involved in medical response at the site should know the directions to the nearest medical facility. The staff at the designated facilities, as well as local Emergency Response personnel, should be aware of site activities and potential hazards prior to any site activity.

FURTHER GUIDANCE: For more information on developing and implementing site controls, see:

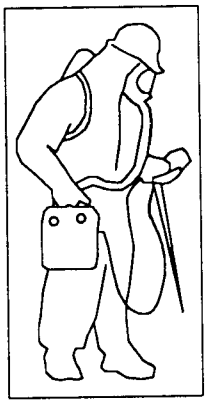
1. *Establishing Work Zones at Uncontrolled Hazardous Waste Sites* (U.S. EPA, 1991, Publication 9285.2-06FS).

2. *Standard Operating Guidelines for Establishing Work Zones* (U.S. EPA, 1985, Publication 9285.2-04A).

CHAPTER 5 PERSONAL PROTECTIVE EQUIPMENT

CHAPTER 5 PERSONAL PROTECTIVE EQUIPMENT

5.0 INTRODUCTION



Vapors, gases, and particulates from hazardous waste site activities place response personnel at risk. For this reason, site personnel must wear appropriate personal protective clothing and equipment (PPE) whenever they are near the site. The purpose of PPE is to shield or isolate individuals from the chemical, physical, and biologic hazards that may be encountered on-site. No single combination of protective clothing and equipment, however, is capable of protecting against all hazards; therefore, PPE should be used in conjunction with (**not in place of**) engineering controls and safe work practices. The effectiveness of the PPE program should be evaluated regularly.

The two basic objectives of any PPE program should be to protect the wearer from safety and health hazards, and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE. To accomplish these goals, §1910.120(g)(5) of the HAZWOPER standards requires a comprehensive PPE program as part of the site-specific HASP. **Exhibit 5-1** lists the main components of a PPE program. **Exhibit 5-2** lists the other regulations where OSHA has incorporated standards for PPE.

EXHIBIT 5-1
Elements of the PPE Program
(29 CFR §1910.120(g)(5))

- PPE selection based upon site hazards.
- PPE use and equipment limitations.
- Work mission duration.
- PPE maintenance and storage.
- PPE decontamination and disposal.
- PPE training and proper fitting.
- PPE donning and doffing procedures.
- PPE inspection procedures
- Evaluation of program effectiveness.
- Limitations due to external or medical conditions.

5.1 SELECTING THE LEVEL OF PPE

As required by HAZWOPER, PPE must protect employees from the specific hazards they are likely to encounter on-site. Selection of the appropriate PPE is a complex process that should take into consideration a variety of factors. Key factors might include: (1) identification of the hazards or suspected hazards; (2) potential exposure routes (e.g., inhalation, skin absorption, etc.); and (3) the performance of the PPE materials and seams in providing a barrier to these hazards.

The amount of protection offered by a particular type of PPE is material/hazard-specific. That is, certain types of PPE will protect well against some hazards and poorly, or not at all, against others. Other factors in the selection process include matching the PPE to the employee's work requirements and task-specific conditions. The durability of the PPE material, as well as its performance in extreme heat or cold, must also be considered.

Several guidelines and data bases exist that provide information on protective clothing (e.g., Guidelines for the Selection of Chemical Protective Clothing, and the Chemical Protective Clothing Performance Index). The National Fire Protection Association (NFPA) also issues information and standards (e.g., NFPA 1991: *Stand on Vapor-Protection Suits for Hazardous Chemical Emergencies*). These standards and guides provide data on chemical resistance, design and construction application, reuse and costs. The NFPA standards also provide information on flammability resistance.

The more that is known about the hazards at the site, the easier it becomes to select PPE. As more information about the hazards and conditions at the site becomes available, the site manager can make decisions to upgrade or downgrade the level

EXHIBIT 5-2
Additional Regulations Incorporated by OSHA for Personal Protective Equipment

29 CFR 1910.120: Hazardous Waste Operations and Emergency Response

29 CFR 1910.132: 41 CFR 50-204.7 (General Requirements for Personal Protective Equipment

29 CFR 1910.133(a): ANSI* Z87.1-1968 (Eye and Face Protection)

29 CFR 1910.134: ANSI Z88.2-1969 (Standard Practice for Respiratory Protection)

29 CFR 1910.135: ANSI Z89.1-1969 (Safety Requirements for Industrial Head Protection)

10 CFR 1910.136: ANSI Z41.1-1967 (Men's Safety Toe Footwear)

29 CFR 1926.100: Head Protection
29 CFR 1926.101: Hearing Protection
29 CFR 1926.102: Eyes and Face Protection
29 CFR 1926.103: Respiratory Protection

* American National Standards Institute
1430 Broadway, New York, NY 10018

of PPE protection to match the tasks at hand and the site hazards. One method of selecting the appropriate level of PPE is to use a numerical criterion -- the total atmospheric vapor/gas concentration. **Exhibit 5-3** outlines the level of PPE required for different ranges of vapor/gas concentrations. (**Chapter 6** provides more detailed information on using action levels to select appropriate levels of protection.)

The following sections present additional guidelines for selecting the appropriate level of PPE. **Exhibit 5-4** provides examples of typical protective clothing, and **Exhibit 5-5** provides sample protective ensembles for each of the four levels of protection (i.e., levels A-D).

5.1.1 Level A

Level A protection is required when the greatest potential for exposure to hazards exists, and when the greatest level of skin, respiratory, and eye protection is required. The following are examples of appropriate Level A equipment: positive pressure, full face-piece self-contained breathing apparatus (SCBA) or positive pressure supplied air respirator with escape SCBA; totally-encapsulating chemical-protective suit; inner and/or outer chemical-resistant gloves; and disposable protective suit, gloves, and boots.

Meeting any of the following criteria warrants use of Level A protection:

- Hazardous substances have been identified and require the highest level of protection for skin, eyes, and the respiratory system;
- The atmosphere contains less than 19.5 percent oxygen;
- Site operations involve a high potential for splash, immersion, or exposure to unexpected materials that are harmful to the skin;
- Operations are being conducted in confined, poorly ventilated areas, and the absence of hazardous substances has not yet been determined; or
- Direct-reading instruments indicate high levels of unidentified vapors or gases in the air.

EXHIBIT 5-3
Suggested Action Levels for PPE*

Level of Protection	Action Level (in ppm above background)
A	500 to 1,000 ppm
B	5 to 500 ppm
C	Background to 5 ppm
D	N/A

* Note that action levels for PPE based on vapor concentration are **only** for situations where the identity of the vapor or gas constituents are unknown. They do not address IDLH environments. Refer to Section 6.9 for more information.

EXHIBIT 5-4
Typical Protective Clothing

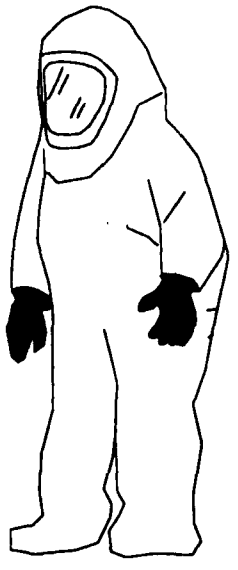
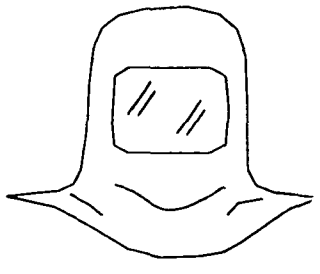
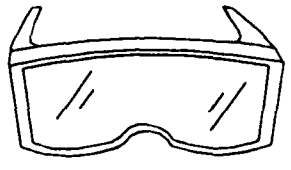
Body Part Protected	Type of Clothing	Type of Protection and Precautions
FULL BODY 	Fully-encapsulating suit (one-piece garment. Boots and gloves may be integral, attached and replaceable, or separate).	Protects against gases, dusts, vapors, and splashes. Does not allow body heat to escape. May contribute to heat stress in wearer.
	Non-encapsulating suit (jacket, hood, pants, or bib overalls, and one-piece coverall).	Protects against splashes, dust, and other materials but not against gases and vapors. Does not protect parts of head and neck. Do not use where gas-tight or pervasive splashing protection is required.
	Aprons, leggings, and sleeve protectors (may be integral or separate). Often worn over non-encapsulating suit.	Provides additional splash protection of chest, forearms, and legs. Useful for sampling, labeling, and analysis operations.
	Radiation-contamination protective suit.	Protects against alpha and beta particles. Does NOT protect against gamma radiation. Designed to prevent skin contamination.
	Flame/fire retardant coveralls (normally worn as an undergarment).	Provides protection from flash fires. May exacerbate heat stress.
HEAD 	Safety helmet (hard hat, made of hard plastic or rubber). May include a helmet liner to insulate against cold.	Protects the head from blows, must meet OSHA requirements at 29 CFR §1910.135.
	Hood (commonly worn over a helmet).	Protects against chemical splashes, particulates, and rain.
	Protective hair covering.	Protects against chemical contamination of hair, prevents hair from tangling in equipment, and keeps hair away from respiratory devices.
EYES & FACE 	Face shield (full-face coverage, eight-inch minimum) or splash hood.	Protects against chemical splashes, but does not protect adequately against projectiles. Provides limited eye protection.
	Safety glasses.	Protects eyes against large particles and projectiles.
	Goggles.	Depending on their construction, can protect against vaporized chemicals, splashes, large particles, and projectiles.

EXHIBIT 5-4
Typical Protective Clothing (cont'd)

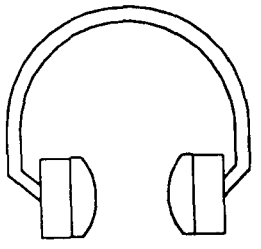
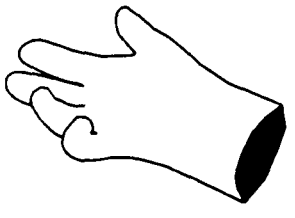
Body Part Protected	Type of Clothing	Type of Protection and Precautions
EARS 	Ear plugs and muffs.	Protects against physiological damage from prolonged loud noise. Use of ear plugs should be reviewed by a health and safety officer because chemical contaminants could be introduced into the ear.
	Headphones (radio headset with throat microphone).	Provides some hearing protection while allowing communication.
HANDS & ARMS 	Gloves and sleeves (may be integral, attached, or separate from other protective clothing).	Protects hands and arms from chemical contact. Wearer should tape-seal gloves to sleeves to provide additional protection and to prevent liquids from entering sleeves. Disposable gloves should be used when possible to reduce decontamination needs.
FEET	Chemical-resistant safety boots.	Protects feet from contact with chemicals.
	Steel-shank or steel-toe safety boots.	Protects feet from compression, crushing, or puncture by falling, moving, or sharp objects. Should provide good traction.
	Non-conductive or spark-resistant safety boots.	Protects the wearer against electrical hazards and prevents ignition of combustible gases or vapors.
	Disposable shoe or boot covers (slips over regular foot covering).	Protects safety boots from contamination and protects feet from contact with chemicals. Use of disposable covers reduces decontamination needs.

EXHIBIT 5-5
Sample Protective Ensembles[1]

LEVEL OF PROTECTION A

Equipment	Protection Provided	Should Be Used When:	Limiting Criteria
RECOMMENDED: • Pressure-demand, full-facepiece SCBA or pressure-demand supplied-air respirator with escape SCBA. • Fully-encapsulating, chemical-resistant suit. • Inner chemical-resistant gloves. • Chemical-resistant safety boots/shoes. • Two-way radio communications. **OPTIONAL:** Hard hat. Coveralls. Cooling unit. Long cotton underwear. Disposable gloves and boot covers.	The highest available level of respiratory. skin, and eye protection.	1. The chemical substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either: - measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or - site operations and work functions involving a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful to skin or capable of being absorbed through the intact skin. 2. Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible. 3. Operations must be conducted in confined, poorly ventilated areas until the absence of conditions requiring Level A protection is determined.	Fully encapsulating suit material must be compatible with the substances involved.

LEVEL OF PROTECTION B

Equipment	Protection Provided	Should Be Used When	Limiting Criteria
RECOMMENDED: • Pressure-demand, full-facepiece SCBA or pressure-demand supplied-air respirator with escape SCBA. • Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two-piece chemical splash suit; disposable chemical-resistant one-piece suit). • Inner and outer chemical-resistant gloves. • Chemical-resistant safety boots/shoes. • Hard hat. • Two-way radio communications. **OPTIONAL:** Coveralls. Face shield. Disposable boot covers. Long cotton underwear	The same level of respiratory protection but less skin protection than Level A. It is the minimum level recommended for initial site entries until the hazards have been further identified.	1. The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres: - with IDLH concentrations of specific substances that do not represent a skin hazard; or - that do not meet the criteria for use of air-purifying respirators. 2. Atmosphere contains less than 19.5 percent oxygen. 3. Presence of incompletely identified vapors or gases is indicated by direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.	Use only when the vapor or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the intact skin.

[1] Based on EPA protective ensembles.

EXHIBIT 5-5
Sample Protective Ensembles (cont'd)

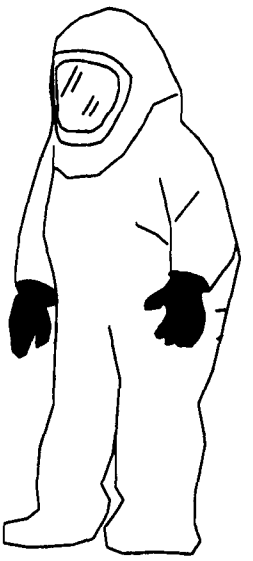
LEVEL OF PROTECTION C

Equipment	Protection Provided	Should Be Used When:	Limiting Criteria
RECOMMENDED: • Full-facepiece, air-purifying, canister-equipped respirator • Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two-piece chemical splash suit; disposable chemical-resistant one-piece suit). • Inner and outer chemical-resistant gloves • Chemical-resistant safety boots/shoes • Hard hat. • Two-way radio communications. **OPTIONAL:** Coveralls. Disposable boot covers Face shield. Long cotton underwear Use of escape mask during initial entry is optional only after characterization (29 CFR 1910.120(c)(5)(ii)).	The same level of skin protection as Level B, but a lower level of respiratory protection.	1. The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin. 2. The types of air contaminants have been identified, concentrations measured, and a canister is available that can remove the contaminant. 3. All criteria for the use of air-purifying respirators are met.	Atmospheric concentration of chemicals must not exceed IDLH levels. The atmosphere must contain at least 19.5 percent oxygen.

LEVEL OF PROTECTION D

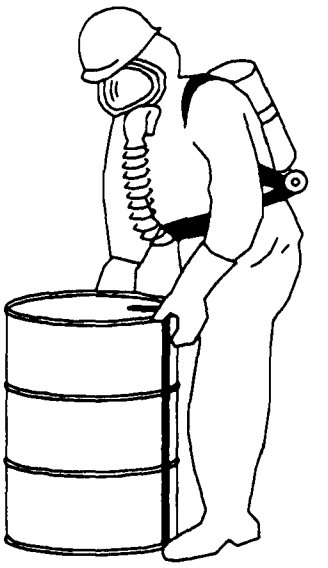
Equipment	Protection Provided	Should Be Used When	Limiting Criteria
RECOMMENDED: • Coveralls • Safety boots/shoes. • Safety glasses or chemical splash goggles. • Hard hat. **OPTIONAL:** Gloves. Escape mask. Face shield.	No respiratory protection Minimal skin protection.	1. The atmosphere contains no known hazard. 2 Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.	This level should not be worn in the Exclusion Zone The atmosphere must contain at least 19.5 percent oxygen

EXHIBIT 5-5
Sample Protective Ensembles (cont'd)



LEVEL A Protection

Totally encapsulating vapor-tight suit with full-facepiece SCBA or supplied-air respirator.

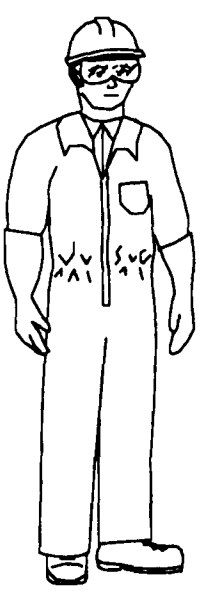


LEVEL B Protection

Totally encapsulating suit does not have to be vapor-tight. Same level of respiratory protection as Level A.

LEVEL C Protection

Full-face canister air purifying respirator. Chemical protective suit with full body coverage.



LEVEL D Protection

Basic work uniform, i.e., longsleeve coveralls, gloves, hardhat, boots, faceshield or goggles.

It may be necessary to base the decision to use Level A protection on indirect evidence. Other conditions that may indicate the need for Level A protection include:

- Confined spaces;
- Suspected or known highly toxic substances, especially when field equipment is not available to test concentrations;
- Visible indicators such as leaking containers or smoking chemical fires; and
- Potentially dangerous tasks, such as initial site entry.

5.1.2 Level B

Level B protection is required under circumstances requiring the highest level of respiratory protection, with a lesser level of skin protection. Potential Level B equipment includes: positive pressure, full face-piece SCBA or positive pressure supplied air respirator with escape SCBA; inner and/or outer chemical-resistant gloves; face shield; hooded chemical resistant clothing; coveralls; and outer chemical-resistant boots.

Meeting any of the following criteria warrants use of Level B protection:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection than Level A;
- The atmosphere contains less than 19.5 percent oxygen; or
- The presence of incompletely identified vapors and gases is indicated but they are not suspected of being harmful to the skin.

The use of Level B protection does not afford as great a level of protection to the skin and eyes as Level A, but it does provide a high level of respiratory protection. At most abandoned, outdoor hazardous waste sites, ambient atmospheric vapor or gas levels have not approached sufficiently high concentrations to warrant Level A protection. Level B protection is often adequate.

5.1.3 Level C

Level C protection is required when the concentration and type of airborne substances is known, and the criteria for using air purifying respirators is met. Typical Level C equipment includes: full-face air-purifying respirators, inner and outer chemical-resistant gloves, hard hat, escape mask, and disposable chemical-resistant, outer boots.

Meeting any of the following criteria warrants use of Level C protection:

- The atmospheric contaminants, liquid splashes or other direct contact will not adversely affect or be absorbed by the skin;
- The types of air contaminants have been identified, concentrations do not exceed IDLH levels, and an air-purifying respirator is available that can remove the contaminants; and
- Oxygen concentrations are not less than 19.5 percent by volume, and job functions do not require SCBA.

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that atmospheric concentrations and other selection criteria permit wearing an air-purifying respirator.

5.1.4 Level D

Level D is the minimum protection required. Appropriate Level D protective equipment may include: gloves, coveralls, safety glasses, face shield, and chemical-resistant steel-toe boots or shoes. Level D protection is primarily a work uniform. This protection is sufficient under the following conditions:

- No contaminants are present; or
- Work operations preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

While these are guidelines for typical equipment to be used in certain circumstances, other combinations of protective equipment may be more appropriate, depending upon specific site characteristics. As an aid to selecting appropriate protective wear, it is recommended that chemical protective suits meet the standards developed by the National Fire Protection Association (NFPA).

5.2 ELEMENTS OF THE PPE PROGRAM

The comprehensive PPE program must address a number of specific factors in addition to selection of the appropriate level of protection. These factors are discussed below. Site managers should also refer to the *Standard Operating Procedures for Site Entry* for additional technical guidance in the use and selection of PPE.

5.2.1 Personal Use Factors and Equipment Limitations

Certain personal features of workers may jeopardize safety during equipment use. Prohibitive or precautionary measures should be taken as necessary for the following personal features:

Facial hair and long hair that passes between the face and the sealing surface of the respirator should be prohibited because it interferes with respirator fit and wearer vision, allowing excessive contaminant penetration. Long hair must be effectively contained within protective hair coverings.

Eyeglasses with conventional temple pieces will interfere with the respirator-to-face seal of a full face-piece. A spectacle kit should be installed in the face masks of workers requiring vision correction, providing a gas-tight seal. Contact lenses may trap contaminants and/or particulate between the lens and the eye, causing irritation. Wearing contact lenses with a respirator in a contaminated atmosphere is prohibited (29 CFR §1910.134(e)(5)(iii)).

Gum and tobacco chewing should be prohibited during respirator use because they may cause ingestion of contaminants and may compromise the respirator fit.

It is especially important to understand all aspects of the clothing operation and the limitations of fully-encapsulating ensembles, as misuse could result in suffocation. During equipment use, workers should be encouraged to report any perceived problems or difficulties to their supervisor(s). These malfunctions may include, but are not limited to:

- Degradation of the protective ensemble.
- Perception of odors.
- Skin irritation.
- Unusual residues on PPE.
- Discomfort.
- Resistance to breathing.
- Fatigue due to respirator use.
- Interference with vision or communication.
- Restriction of movement.
- Personal responses such as rapid pulse, nausea, and chest pain.

If a supplied-air respirator is being used, all hazards that might endanger the integrity of the air line should be removed from the working area prior to use. During use, other workers and vehicles should be excluded from the area.

5.2.2 Work Mission Duration

In selecting PPE, it is important to consider the anticipated duration of the work mission. Several factors may limit the mission length, including: air supply, equipment effectiveness, temperature, and coolant supply.

Air Supply Consumption. The duration of the air supply must be considered before planning any SCBA-assisted work activity. The anticipated operating time of a SCBA is clearly indicated on the breathing apparatus. This designated operating time is based on a moderate work rate used in the NIOSH/MSHA certification test. In actual operation, however, several factors can reduce the rated operating time. The following variables should be considered to adjust work actions and operating time accordingly:

- Work rate. The actual in-use duration of SCBAs may be reduced by one-third to one-half during strenuous work (e.g., drum handling, major lifting, or any task requiring repetitive speed of motion).

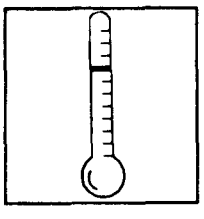
- Fitness. Well-conditioned individuals generally utilize oxygen more efficiently and can extract more oxygen from a given volume of air than unfit individuals, thereby slightly increasing the SCBA operating time.

- Body size. Larger individuals generally consume air at a higher rate than smaller individuals, thereby decreasing the SCBA operating time.

- Breathing patterns. Quick, shallow, or irregular breaths use air more rapidly than deep, regularly spaced breaths. Heat-induced anxiety and lack of acclimatization may induce hyperventilation, resulting in decreased SCBA operating time.

Suit/Ensemble Permeation, Degradation, and Penetration. The possibility of chemical permeation, degradation, or penetration of protective ensembles during the work mission is always a matter of concern and may limit mission duration. Possible causes are suit valve leakage, because of excessively hot or cold temperatures or improper maintenance, and exhalation valve leakage at excessively hot or cold temperatures.

Also, when considering mission duration, it should be remembered that no single clothing material is an effective barrier to all chemicals or all combinations of chemicals, and no material is an effective barrier to prolonged chemical exposure.



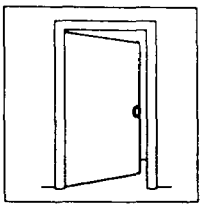
Ambient Temperature. The ambient temperature may have a major influence on work mission duration as it affects both the worker and the protective integrity of the ensemble. Heat stress, which can occur even in relatively moderate temperatures, presents the greatest immediate danger to an ensemble-encapsulated worker. Protecting against heat stress is discussed later in this chapter. Hot and cold ambient temperatures also can affect:

- Valve operation on suits and/or respirators;
- The durability and flexibility of suit materials;
- The integrity of suit fasteners;
- The breakthrough time and permeation rates of chemicals; and
- The concentration of airborne contaminants.

All of these factors may decrease the duration of protection provided by a given piece of clothing or respiratory equipment.

Coolant Supply. Under warm or strenuous work conditions, adequate coolant (e.g., ice or chilled air, refrigeration coils) should be provided to keep the wearer's body at a comfortable temperature and to reduce the potential for heat stress. If coolant is necessary, the duration of the coolant supply will directly affect mission duration.

5.2.3 Storage and Maintenance



Clothing and respirators must be stored properly to prevent damage or malfunction due to exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact. Many equipment failures can be directly attributed to improper storage. Procedures must be specified for both pre-issuance warehousing and, more importantly, post-issuance (in-use) storage.

Potentially contaminated, reusable clothing should be stored (generally bagged) in a well-ventilated area, with good air flow around each item, until the extent of contamination is documented. The garment is then either decontaminated or disposed. Never store these materials near street clothing.

Different types and materials of clothing and gloves should be stored separately to prevent issuing the wrong material by mistake. Protective clothing should be folded or hung in accordance with manufacturers' recommendations.

SCBAs, supplied-air respirators, and air-purifying respirators should be dismantled, washed, and disinfected after each use. SCBAs should be stored in storage chests supplied by the manufacturer. Air-purifying respirators should be

stored individually in their original cartons or carrying cases, or in heat-sealed or resealable plastic bags.

The technical aspects of PPE maintenance procedures vary by manufacturer and type of equipment. Manufacturers frequently restrict the sale of certain PPE parts only to individuals or groups who are specially trained, equipped, and "authorized" by the manufacturer to purchase them. Explicit procedures should be adopted in the site work plan to ensure that the appropriate level of maintenance is performed only by individuals trained at that level.

The following classification scheme is often used to divide maintenance into three levels:

- **Level 1**: User or wearer maintenance, requiring a few common tools or no tools at all.
- **Level 2**: Shop maintenance that can be performed by the employer's maintenance shop.
- **Level 3**: Specialized maintenance that can be performed only by the factory or an authorized repair person.

5.2.4 Training and Proper Fitting

The PPE program must ensure that employees are trained in the proper use and fitting of PPE.

Training. Employees should be trained in the proper use of protective equipment prior to using any PPE on-site. The purpose of training is to: (1) become familiar with the equipment in a nonhazardous situation; (2) instill confidence and awareness in the user of the limitations and capabilities of the equipment; (3) increase the operating and protective efficiency of PPE use; and (4) reduce maintenance expenses.

Training must be completed prior to actual PPE use in any hazardous environment and should occur at least annually. At a minimum, the training portion of the PPE program should explain the user's responsibilities and should address the following issues, utilizing both classroom and field training when necessary:

- OSHA requirements as delineated in 29 CFR Part 1910, Subparts I and Z.
- OSHA requirements for respiratory protection at 29 CFR §1910.134.
- The proper use and maintenance of the selected PPE, including capabilities and limitations.
- The nature of the hazards and the consequences of not using PPE.
- Instruction in inspection, donning, doffing, decontaminating, checking, fitting, and using PPE.
- Individualized respirator fit testing to ensure proper fit.
- Use of PPE in normal air for a long familiarity period, as well as use of PPE in a test atmosphere to evaluate its effectiveness.
- The user's responsibility (if any) for decontamination, cleaning, maintenance, and repair of PPE.
- Emergency procedures and self-rescue in the event of PPE failure.
- The elements of the HASP and the individual's responsibilities and duties in an emergency, including the buddy system (see **Chapter 4**).
- The human factors influencing PPE performance. The discomfort and inconvenience of wearing PPE can create a resistance to the conscientious use of PPE. One essential aspect of training is to make the user aware of the need for PPE and to instill motivation for the proper use and maintenance of PPE.

Respirator Fit Testing. The "fit" of the facepiece-to-face seal of a respirator must be tested on each potential wearer to ensure a tight seal; every facepiece does not fit every wearer. Certain features, such as scars, very prominent cheekbones, deep skin creases, dentures or missing teeth, and the chewing of gum and tobacco may interfere with the respirator-to-face seal. Under conditions where these features may impede a good seal, a respirator must not be worn.

For a qualitative respirator fit testing protocol, see Appendix D of the OSHA lead standard (29 CFR §1910.1025). For specific quantitative testing protocols, literature supplied by manufacturers of quantitative fit testing equipment should be consulted.

5.2.5 Donning and Doffing Procedures

The PPE program should include clearly defined donning and doffing procedures.

Donning. A routine should be established and practiced periodically for donning all levels of protective clothing and equipment. As donning and doffing the ensembles can be difficult to perform alone and solo efforts increase the possibility of improper use and suit damage, assistance should be provided. The donning routine should be modified depending on the particular type of suit or the need for extra gloves or boots. Once the equipment has been donned, the fit should be evaluated. The clothing should not be too small, increasing the likelihood of tearing the suit material and accelerating worker fatigue, nor should it be too large, increasing the possibility of snagging the material and compromising the dexterity and coordination of the worker. In either case, better fitting clothing should be provided.

Doffing. Exact procedures for removing PPE must be established and followed to prevent contaminant migration from the work area and transfer of contaminants to the wearer's body, the doffing assistant, and others. These procedures should be performed only after decontamination of the suited worker (see **Chapter 9**). Although they require a suitably attired assistant, both worker and assistant should avoid any direct contact with the outside surface of the contaminated suit throughout the decontamination procedures. If the suit is to be reused, the assistant should also avoid contact with the inside of the garment.

5.2.6 Inspection Procedures

An effective PPE inspection program should feature four different inspections:

- Inspection and operational testing of equipment received from the factory or distributor;
- Inspection of equipment as it is issued;
- Inspection before and after use or training and prior to maintenance; and
- Periodic inspection of stored equipment.

The inspection checklist in **Exhibit 5-6** may be helpful in conducting inspections of PPE prior to and during regular use. Periodic inspection will cover somewhat different areas in varying degrees of depth. Detailed inspection procedures, where appropriate, are usually available from the manufacturer.

Individual identification numbers should be assigned to all reusable pieces of equipment and records must be maintained, by number, of all inspection procedures. At a minimum, each inspection should record the ID number, date, inspector, and any unusual conditions or findings.

5.2.7 PPE Program Evaluation

At a minimum, the PPE program should be reviewed annually to evaluate the effectiveness of the following factors:

- The number of personnel-hours that are spent in various PPE ensembles;
- The degree to which the site complies with the HAZWOPER standards on PPE use, inspection, maintenance, and recordkeeping;
- Accident, injury, and illness statistics, and recorded levels of exposure;
- The adequacy of operating procedures to guide the selection of PPE;
- The degree of coordination with comprehensive and site-specific health and safety programs; and
- Recommendations for and results of program improvement and modification.

5.2.8 Other Considerations

There are other factors, not discussed above, that may also affect the use and effectiveness of PPE. Several of these factors, dealing with the physical state of the user, are discussed below.

Heat Stress. Wearing PPE puts a hazardous waste worker at considerable risk of developing heat stress, which can result in adverse health effects ranging from transient heat fatigue to serious illness or death. Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and

EXHIBIT 5-6
Sample PPE Inspection Checklists

CLOTHING

Before use:

- Determine that the clothing materials are correct for the specified task at hand.
- Visually inspect for:
  - -- imperfect seams
  - -- non-uniform coatings
  - -- tears
  - -- malfunctioning closures
- Hold up to light and check for pinholes.
- Flex product:
  - -- observe for cracks
  - -- observe for other signs of shelf deterioration
- If the product has been used previously, inspect inside and out for signs of chemical attack:
  - -- discoloration
  - -- swelling
  - -- stiffness

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- Closure failure.
- Tears.
- Punctures.
- Seam discontinuities.

GLOVES

Before use:

- Pressurize glove to check for pinholes. Either blow into glove, then roll gauntlet towards fingers or inflate glove and hold under water. In either case, no air should escape.

FULLY-ENCAPSULATING SUITS

Before use:

- Check the operation of pressure relief valves.
- Inspect the fitting of wrists, ankles, and neck.
- Check faceshield, if so equipped, for:
  - -- cracks
  - -- fogginess

RESPIRATORS*

SCBA

- Inspect SCBAs:
  - -- before and after each use
  - -- at least monthly when in storage
  - -- every time they are cleaned
- Check all connections for tightness.
- Check material conditions for:
  - -- signs of pliability
  - -- signs of deterioration
  - -- signs of distortion
- Check for proper setting and operation of regulators and valves (according to manufacturers' recommendations).
- Check operation of alarm(s).
- Check faceshields and lenses for cracks and fogginess

Air-Purifying Respirators

- Inspect air-purifying respirators:
  - -- before each use to be sure they have been adequately cleaned
  - -- after each use
  - -- during cleaning
  - -- monthly if in storage for emergency use
- Check material conditions for:
  - -- signs of pliability
  - -- signs of deterioration
  - -- signs of distortion
- Examine cartridges or canisters to ensure that:
  - -- they are the proper type for the intended use
  - -- the expiration date has not been passed
  - -- they have not been opened or use previously
- Check faceshields and lenses for cracks and fogginess

Supplied-Air Respirators

- Inspect supplied-air respirators:
  - -- daily when in use
  - -- at least monthly when in storage
  - -- every time they are cleaned
- Inspect air lines prior to each use for cracks, kinks, cuts, frays, and weak areas.
- Check for proper setting and operation of regulators and valves (according to manufacturers' recommendations).
- Check all connections for tightness.
- Check material conditions for:
  - -- signs of pliability
  - -- signs of deterioration
  - -- signs of distortion
- Check faceshields and lenses for cracks, fogginess

*** Must have NIOSH/MSHA approval**

the individual characteristics of the worker. Heat stress is one of the most common and potentially serious illnesses at hazardous waste sites and, therefore, warrants regular monitoring and other preventive measures. **Chapter 8** provides more detailed information on heat stress and PPE.

Other Factors. Although wearing PPE decreases a worker's performance, the magnitude of this effect varies considerably, depending on both the individual and the PPE ensemble used. One of the physiological factors that may affect worker ability to function using PPE is physical fitness. The more fit someone is, the more work they can perform safely. At a given level of work, a fit person, relative to an unfit person, will have: less physiological strain; a lower heart rate; a lower body temperature, indicating less retained body heat; a more efficient sweating mechanism; slightly lower oxygen consumption; and slightly lower carbon dioxide production.

The degree to which a worker's body has adjusted or acclimatized to working under hot conditions may affect his or her ability to do work. Acclimatized individuals generally have better mechanisms to maintain lower skin and body temperatures at a given level of environmental heat and work loads. Although acclimatization can occur quickly, a progressive 6-day acclimatization period before allowing an employee to work a full shift on a hot day is recommended. With fit or trained individuals, the acclimatization period may be shortened by 2 or 3 days. Acclimatization can occur quickly, and work regimens should be adjusted to account for this.

FURTHER GUIDANCE: For more information on selecting, using, and maintaining PPE, see:

1. *Certified Equipment List as of December 31, 1990.* (NIOSH, 1991, Publication 91-105) Cincinnati, OH. Updated annually.

2. *Standard Operating Guidelines for Site Entry* (U.S. EPA, 1985, Publication 9285.2-01A).

3. Schwope, A.D.; Costas, P.P.; Jackson, J.O.; Stull, J.O.; and D.J. Weitzman, 1987, *Guidelines for the Selection of Chemical Protective Clothing, 3rd Edition.* American Conference of Governmental Industrial Hygienists, Inc. Cincinnati, OH.

4. *National Fire Codes: A Compilation of NFPA Codes, Standards, Recommended Practices and Guides, Vol.8.* (1991, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101).

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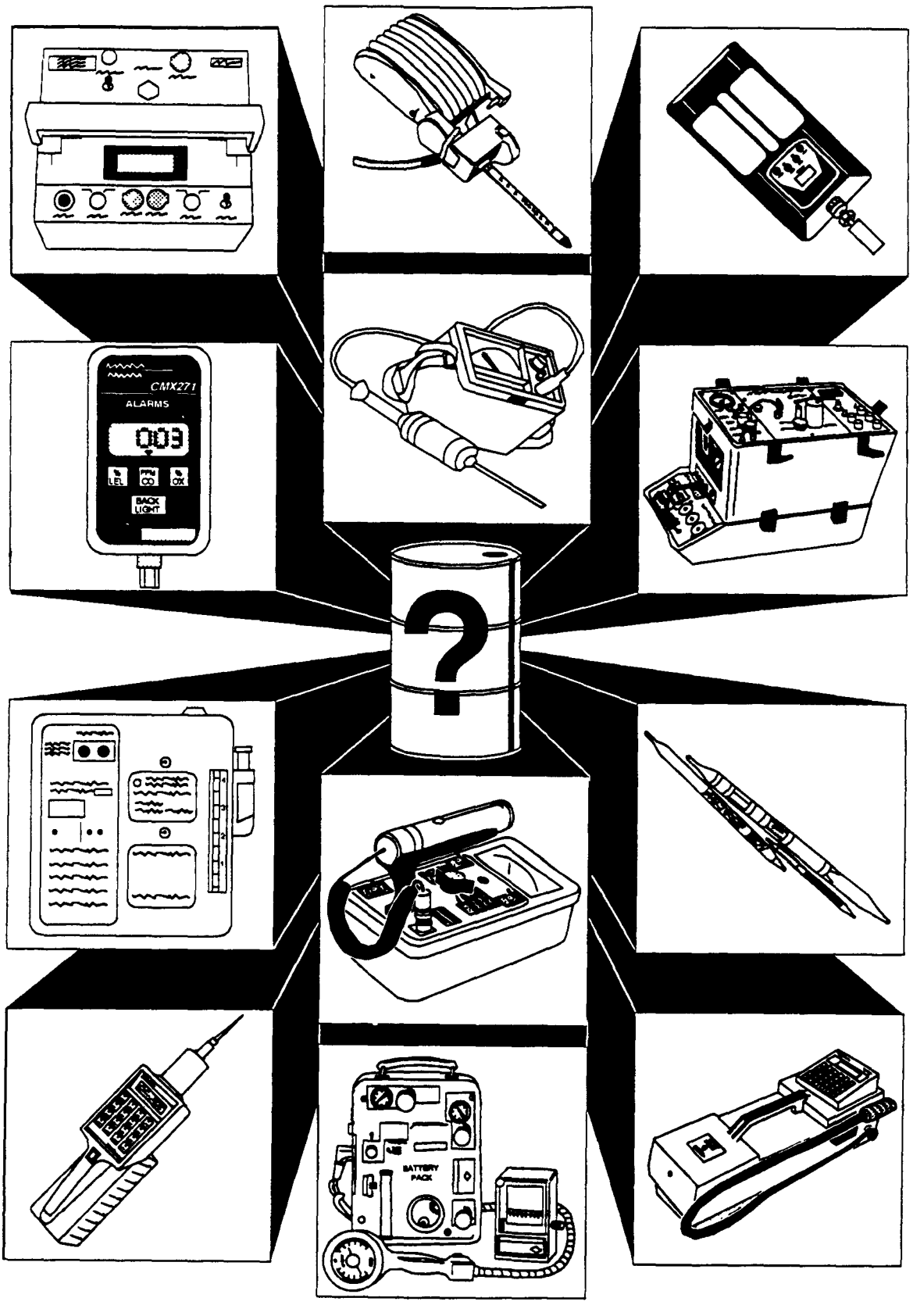
CHAPTER 6 AIR MONITORING



CHAPTER 6 AIR MONITORING

6.0 INTRODUCTION

The presence of hazardous materials at a site, as well as actions taken to address these materials, can cause the release of hazardous substances into the air. Chemical fires, transportation accidents, open or leaking containers, wind-blown dust, and site cleanup activities produce emissions that can rapidly affect the health and safety of response personnel and the public. Hazardous atmospheres can be:

- Explosive (characterized by the presence of ignitable or explosive vapors, gases, aerosols, and dusts);
- Toxic (characterized by the presence of vapors, gases, particulates, and aerosols);
- Oxygen-deficient (characterized by the displacement of breathable air); or
- Radioactive (characterized by the presence of radioactive materials).

The presence of one or more of these hazards is an important factor in determining subsequent actions that should be taken to protect people and the environment. Their presence may dictate operations that are necessary to mitigate the likelihood of an incident, and safety considerations for response personnel.

Airborne hazards can be predicted if the substance involved, its chemical and physical properties, and weather conditions are known. However, air monitoring is necessary to confirm predictions, to identify or measure contaminants, and to detect unknown air pollutants. Therefore, 29 CFR §1910.120(h) sets forth specific requirements for air monitoring. The remainder of this chapter describes the air monitoring requirements and outlines a number of practices that can be implemented to meet these requirements most effectively.

6.1 OBJECTIVES OF AIR MONITORING

The objectives of air monitoring during response operations are to:

- Identify and quantify airborne contaminants on- and off-site;
- Track changes in air contaminants that occur over the lifetime of the incident;
- Ensure proper selection of work practices and engineering controls;
- Determine the level of worker protection needed;
- Assist in defining work zones; and
- Identify additional medical monitoring needs in any given area of the site.

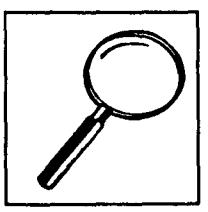
HAZWOPER requires air monitoring to be performed wherever the possibility of employee exposure to hazardous substances exists. Upon initial entry, representative air monitoring should be conducted to identify any IDLH conditions, exposure over PELs, exposure over a radioactive material's dose limits, or other dangerous conditions, such as flammable or oxygen-deficient environments. Air monitoring should also be conducted to confirm that the area considered for the Support Zone is clean (i.e., does not contain concentrations of hazardous substances that require worker protection). If there is any question that contaminants may have migrated into the area considered for the Support Zone, air and/or surface soil samples should be collected and compared with on-site and off-site background samples.

To determine whether additional monitoring is required to designate work zones, the site manager should evaluate the results of the initial air monitoring survey, the visual characterization of site hazards, the properties of on-site contaminants, and potential pathways of contaminant dispersion. During the site hazard evaluation, the site manager should use information from direct-reading instruments, visible indicators (signs, labels, placards, etc.), and other sources (manifests, inventories, government agency records, etc.) to evaluate the presence or potential for the release of contaminants into the air. Limited air sampling may also be conducted if time is available. Based

on an assessment of this preliminary information, a more comprehensive air monitoring strategy should be developed and implemented.

During the response operation, (e.g., when soil or containers are moved or disturbed), employers should monitor those employees likely to have the highest exposures to hazardous substances (i.e., exposures above PELs). In accordance with 29 CFR §1910.120(h)(4), if any employee has been exposed to elevated levels of hazardous substances, extensive personal monitoring must be conducted, in conjunction with additional site control measures, to ensure employee health and safety.

6.2 IDENTIFYING AIRBORNE CONTAMINANTS



The two methods generally available for identifying and/or quantifying airborne contaminants are: (1) on-site use of direct-reading instruments (DRIs); and (2) laboratory analysis of air samples obtained by gas sampling bag, filter, sorbent, or wet-contaminant collection methods.

DRIs may be used to quickly detect flammable or explosive atmospheres, oxygen deficiency, certain gases and vapors, and ionizing radiation, as well as to identify changing site conditions. Because DRIs provide information at the time of sampling and allow for rapid decision-making, they are the primary tools of initial site characterization. All DRIs, however, have inherent limitations in their ability to detect hazards. DRIs detect and/or measure only specific classes of chemicals and usually are not designed to detect airborne concentrations below 1 ppm. In addition, many of the DRIs that have been designed to detect one particular substance also detect other substances and, consequently, may give false readings. DRIs must be operated, and their data interpreted, by qualified individuals using properly calibrated instruments. Additional monitoring should be conducted at any location where a positive instrument response occurs.

Because DRIs are available for only a few specific substances and are rarely sensitive enough to detect low concentrations of hazardous substances that may nonetheless present health risks, long-term or "full-shift" air samples must also be collected and analyzed in a laboratory. Full-shift air samples for some chemicals may be collected with passive dosimeters, or by means of a pump that draws air through a filter or sorbent.

Selection of the proper sampling media is determined by the physical state of the contaminants. Some chemicals, such as PCBs, may occur as both vapors and particulate-bound contaminants. In such cases, a dual-media system is needed to measure accurately for the chemical.

6.2.1 Direct Reading Instruments

During site operations, it is essential to monitor for the presence of, or changes in, the level of airborne contaminants. Changes in contaminant levels may occur when work is initiated in a different area of the site, new contaminants are discovered, or different types of operations are begun in a particular area (e.g., drum opening, as opposed to exploratory well drilling). DRIs can be used to provide approximate total concentrations of many organic chemicals and a few inorganic substances. If specific organics (and inorganics) have been identified, then DRIs calibrated to those materials can be used for more accurate on-site assessment.

To obtain air monitoring data rapidly at the site, monitoring personnel may use instruments with flame ionization detectors (FIDs), photo-ionization detectors (PIDs), and other similar instruments. These may be used as survey instruments (total concentration mode), or operated as gas chromatographs (gas chromatograph mode). As gas chromatographs, these instruments can provide real-time, qualitative/quantitative data when calibrated with standards of known air contaminants. Combined with selective laboratory analysis of samples, they provide an excellent tool for evaluating airborne organic hazards on a real-time basis, at a lower cost than analyzing all samples in a laboratory. **Exhibit 6-1** lists several direct-reading air monitoring instruments, and **Appendix D** presents more specific information on the characteristics of the PID and the organic vapor analyzer (OVA).

EXHIBIT 6-1
Summary of Direct-Reading Air Monitoring Instruments

Principle of Detection and Monitoring Need	Instrument	Features	Limitations
Wheatstone Bridge Filament *Monitoring Need:* ***Combustible Gas***	Combustible Gas Detector	• Nonspecific detector for combustible gases measures gas concentrations as a percentage of lower explosive limit (LEL) • Lightweight, portable, and easy to use • Visual and audible alarms • Probe provides remote sensing capabilities • 8- to 12-hour battery operating life for most models • Accuracy varies depending upon the model; accuracies of ± 2 to 3 percent are attainable	• Potential interferences from leaded gasoline and silicates, which are more strongly adsorbed on catalyst than oxygen or gas in question. Membranes are available to minimize these effects. • Most models do not measure specific gases • May not function properly in oxygen-deficient atmospheres (< 10 percent)
Chemical Cell *Monitoring Need:* ***Oxygen Deficiency***	Oxygen Meter	• Direct readout in percent oxygen • Visual and audible alarm • Lightweight, portable, and easy to use • Probe provides remote sensing capabilities • Accuracies of ± 1 percent are attainable, but depend on the particular model • Generally 8- to 10-hour battery life	• High humidity may cause interference • Strong oxidants may cause artificially high readout
Chemical Sensor Wheatstone Bridge Filament *Monitoring Need:* ***Combustible Gas/Oxygen Deficiency***	Combination Oxygen Meter and Combustible Gas Detector	• Calibrated to Pentane or Hexane • Measure percent oxygen and gas concentration as a percentage of LEL • Both visual and audible alarm • Remote sensing capabilities • Lightweight, portable, and easy to use • Accuracies of ± 2 percent are attainable but may be as high as ± 10 percent, depending on the models	• Same limitation as oxygen meters and combustible gas detectors • In certain units, acid gases and high CO_2 concentrations shorten the life of oxygen sensor/cells • Certain units require conversion factor for true specific compound response readings • In certain units, oxygen calibration is altitude dependent
Optical, Electrical, Piezoelectric *Monitoring Need:* ***Aerosol/ Particulate***	Aerosol/ Particulate Monitor	• Selectable ranges • Particle size differentiation available • Certain units have data logging capabilities	• Factory recalibration required on certain units • Values represent total particulates: dust, mist, aerosols are all inclusive with no differentiation • Cold weather may have adverse effect on detector

EXHIBIT 6-1
Summary of Direct-Reading Air Monitoring Instruments

Principle of Detection and Monitoring Need	Instrument	Features	Limitations
Photoionization Ultraviolet Light *Monitoring Need:* ***Toxic Gas/ Vapors***	Photoionization Detector (PID)	• Nonspecific gas and vapor detection for organics and some inorganics • Not recommended for permanent gases • Lightweight (4 to 9 lbs) and portable • Sensitive to 0.1 ppm benzene. Sensitivity is related to ionization potential of compound • Remote sensing capabilities • Response time of 90 percent in less than 3 seconds • More sensitive to aromatics and unsaturated compounds that the flame ionization detector (FID) • 8-hour battery operating life; certain units with external interchangeable battery packs • Audible alarm is available • Certain units have data logging/computer interface capabilities • Certain units available with calibration libraries • Certain units available with interchangeable lamps	• Does not monitor for specific gases or vapors • Cannot detect hydrogen cyanide or methane • Cannot detect some chlorinated organics • High humidity and precipitation negatively affect meter response
Hydrogen Flame Ionization *Monitoring Need:* ***Toxic Gas/ Vapors***	Flame Ionization Detector (FID)	• In the survey mode, it functions as a nonspecific total hydrocarbon analyzer; in the gas chromatograph mode, it provides tentative qualitative/quantitative identification • Most sensitive to saturated hydrocarbons, alkanes, and unsaturated hydrocarbon alkanes • Lightweight (12 lbs) and portable • Remote sensing probe is available • Response time is 90 percent in 2 seconds • 8-hour battery operating life • Sounds audible alarm when predetermined levels are exceeded	• Not suitable for inorganic gases (e.g., Cl_2, HCN, NH_3) • Less sensitive to aromatics and unsaturated compounds than PID • Requires skilled technicians to operate the equipment in the GC mode and to analyze the results • Requires changes of columns and gas supply when operated in the GC mode in certain units • Because specific chemical standards and calibration columns are needed, the operator must have some idea of the identification of the gas/vapor • Substances that contain substituted functional group (e.g.. hydroxide (OH-) or (Cl-) Chloride groups) reduce the detector's sensitivity

EXHIBIT 6-1
Summary of Direct-Reading Air Monitoring Instruments

Principle of Detection and Monitoring Need	Instrument	Features	Limitations
Infrared Radiation *Monitoring Need:* ***Toxic Gas/ Vapors***	Infrared Analyzer	• Overcomes the limits of most infrared (IR) analyzers by use of a variable filter; can be used to scan through a portion of the spectrum to measure concentration of several gases or can be set at a particular wavelength to measure a specific gas • Detects both organic and inorganic gases • Portable but not as lightweight (32 lbs.) as the photoionization or the flame ionization detectors	• Not as sensitive as PID or the FID • Less portable than other methods of gas/vapor detection • Requires skilled technicians to operate and analyze results when positive identification is needed • Interference by water vapor and carbon dioxide • Most require AC power source • Positive identification requires comparison of spectrum from strip chart recorder with published adsorption spectrum; infrared spectrum not available for all compounds
Chemical Reaction Producing a Color Change *Monitoring Need:* ***Toxic Gas/ Vapors***	Indicator Tubes	• Provides qualitative, semi-quantitative identification of volatile organics and inorganics • Accuracy of only about ± 25 percent • Simple to use, and relatively inexpensive • Real-time/semi-realtime results	• Low accuracy • Subject to leakage during pumping • Requires previous knowledge of gases/vapors in order to select the appropriate detector tube • Some chemicals interfere with color reaction to read false positive • Temperature and humidity may affect readings
Electrochemical Cell *Monitoring Need:* ***Toxic Gas/ Vapors Specific Atmospheres***	Toxic Atmosphere Monitor	• Ease of operation • Small, compact, lightweight • Audible alarm upon exceeding present action level or TLV • Certain units have digital readout • Generally compound-specific • Certain units interface with data logger	• Cross sensitivity • Slow response/recovery after exposure to high contamination levels • Limited number of chemicals detected
Metal-Oxide Semiconductor *Monitoring Need:* ***Toxic Gas/ Vapors***	Toxic Atmosphere Monitor	• Ease of operation • Small, compact, lightweight • Audible alarm upon exceeding present action level or TLV • Certain units have digital readout • Certain units interface with data logger • Nonspecific gas and vapor detection for some organics and inorganics	• Cross sensitivity • Slow response/recovery after exposure to high contamination levels

EXHIBIT 6-1
Summary of Direct-Reading Air Monitoring Instruments

Principle of Detection and Monitoring Need	Instrument	Features	Limitations
Scintillation Detector *Monitoring Need:* ***Radiation***	Radiation Meters	• Measures radiation in mR/hr (battery operated) • Probe provides remote sensing capabilities • Accuracy and sensitivity varies considerably with manufacturer and type of meter • A variety of meters are available. Some measure total ionizing radiation; others are specific for gamma, alpha, or a combination of two or more types	• Some meters do not determine type of radiation
Gold Film Sensor *Monitoring Need:* ***Mercury Vapor***	Mercury Vapor Analyzer	• Compound specific; has survey and sample modes • 0.001 mg/m^3 detection limit • Provides sensor saturation readout; saturated sensor cleaning capabilities • Can be used with dosimeters for on-site dosimetry • Microprocessor serves reading; automatically re-zeros • Certain units have data logging capabilities • 5-hour battery life	• Requires yearly factory recalibration • Short battery life • Requires AC power for Heat Cleaning Cycle

Sources: Mathamel, 1981; Spittler, 1980; McEnery, 1982; National Mine Service Company, 1980; Gas-Tech, 1980; Enmet Corporation, 1979; Foxboro Analytical, 1982; HNU Systems, 1982, 1991; Photovac International, Inc., 1989; Jerome, 1990; MIE, 1990.

6.2.2 Air Sampling

For more complete information about air contaminants, measurements obtained with DRIs should be supplemented with air samples. To assess air contaminants more thoroughly, air sampling devices equipped with appropriate collection media should be placed at various locations throughout the area. These samples provide air quality information, and can indicate the presence and concentrations of contaminants over the lifetime of site operations. As data are obtained (from the analysis of samples, DRIs, and site operations), adjustments should be made in the type and number of samples, frequency of sampling, and analysis required. In addition to air samplers, area sampling stations may also include DRIs equipped with recorders and operated as continuous air monitors. Area sampling stations should be placed in the following locations:

Upwind. Because many hazardous incidents occur near industries or highways that generate air pollutants, samples must be taken upwind of the site, and wherever there are other potential sources of contaminants, to establish background levels of air contaminants.

Support Zone. Samples must be taken near the command post or other support facilities to ensure that they are in fact located in a clean area, and that the area remains clean throughout operations at the site.

Contamination Reduction Zone. Air samples should be collected along the Contamination Control Line to ensure that personnel are properly protected and that on-site workers are not removing their protective gear in a contaminated area.

Exclusion Zone. The Exclusion Zone presents the greatest risk of exposure to chemicals and requires the most air sampling. The location of sampling stations should be based upon hot spots or source areas detected by DRIs, types of substances present, and potential for airborne contaminants. The data from these stations, in conjunction with intermittent walk-around surveys with DRIs, should be used to verify the selection of proper levels of PPE and to set Exclusion Zone boundaries, as well as to provide a continual record of air contaminants.

Fenceline/Downwind. Sampling stations should be located downwind from the site to determine whether any air contaminants are migrating from the site. If there are indications of airborne hazards in populated areas, additional samplers should be placed downwind.

In many instances, only air sampling and laboratory analysis are necessary for detection and quantification. Although accurate, the air sampling and laboratory analysis option has two disadvantages: cost and time. Analyzing large numbers of samples in laboratories is expensive, especially when results are needed quickly. On-site laboratories tend to reduce the turn-around time, but their cost may be prohibitive.

6.3 AIR SAMPLING EQUIPMENT AND MEDIA

A variety of air sampling equipment may be used to collect samples of potentially dangerous substances that may become airborne at hazardous waste sites. Sampling systems typically include a calibrated air sampling pump that draws air into selected collection media. Some of the most common types of sampling and collection media are described below:

Organic Vapors. Activated carbon is an excellent sorbent for most organic vapors. However, other solid sorbents (such as Tenax®, silica gel, and Florisil®) are routinely used to sample specific organic compounds or classes of compounds that do not adsorb or desorb well on activated carbon. The samples should be collected using an industrial hygiene personal sampling pump with either one sampling port or a manifold system capable of simultaneously collecting samples on several sorbent tubes. Individual pumps with varying flow rates may also be used to collect several samples at once. The sorbent tubes may contain:

- Activated carbon, to collect vapors of materials with a boiling point above zero degrees centigrade. These materials include most solvent vapors.

- A porous polymer, such as Tenax® or Chromosorb® to collect substances that adsorb poorly onto activated carbon (e.g., high-molecular-weight hydrocarbons, organophosphorus compounds, and the vapors of certain pesticides). Some of these porous polymers also adsorb organic materials at low ambient temperatures more efficiently than carbon.

- A polar sorbent, such as silica gel to collect organic vapors that exhibit a relatively high dipole movement (e.g., aromatic amines).

- Any other specialty adsorbent selected for the specific site (e.g., a Florisil® tube, if PCBs are suspected).

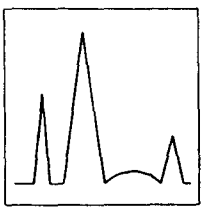
Inorganic Gases. The inorganic gases present at a site would primarily be polar compounds such as the haloacid gases and ammonia. These gases can be adsorbed onto silica gel tubes and analyzed by ion chromatography. Impingers filled with selected liquid reagents can also be used.

Aerosols. Aerosols (solid or liquid particulates) that may be encountered at an incident include contaminated and non-contaminated soil particles, heavy-metal particulates, pesticide dusts, and droplets of organic or inorganic liquids. An effective method for sampling these materials is to collect them on a particulate filter, such as a glass fiber or mixed cellulose ester fiber membrane. A

backup impinger filled with a selected absorbing solution may also be necessary.

Colorimetric detector tubes can also be used with a sampling pump when monitoring specific compounds. **Exhibit 6-2** lists several air collection and analytical methods.

6.4 SAMPLE COLLECTION AND ANALYSIS



Samples are analyzed to determine types and quantities of substances present at a site. Good sources of information on collecting and analyzing samples for a variety of chemical substances include: (1) EPA's *Compendium of Methods for Determination of Toxic Organic Compounds in Air*; (2) the National Institute for Occupational Safety and Health's (NIOSH) *Manual of Analytical Methods*, (Volumes 1-3, 4th Edition); and (3) *OSHA Analytical Methods*. These references may be consulted for specific procedures. This section provides additional guidance on sample collection and analysis.

Aerosols. Samples for aerosols should be taken at a relatively high flow rate (generally about 2 liters per minute) using a standard industrial hygiene pump and filter assembly. To collect total particulates, a membrane filter having a 0.8 micrometer pore size is common. The sample can be weighed to determine total particulates, then analyzed destructively or non-destructively for metals. If a non-destructive metals analysis is performed, or if the filter is sectioned, additional analyses (e.g., organics, inorganics, and optical particle sizing) can be performed.

Sorbent Samples. The sorbent material chosen, the amount used, and sample volume will vary according to the types and concentrations of substances anticipated at a particular site. Polar sorbent material such as silica gel will collect polar substances that are not adsorbed well onto activated carbon and some of the porous polymers. The silica gel sample can be split and analyzed for the haloacid gases and aromatic amines.

Activated carbon and porous polymers will collect a wide range of compounds. Exhaustive analysis to identify and quantify all the collected species is prohibitively expensive at any laboratory and technically difficult for a field laboratory. Therefore, samples should be analyzed for principal hazardous constituents (PHCs). The selection of PHCs should be based on the types of materials anticipated at a given site and on information collected during the initial site survey. To aid in the selection of PHCs, a sample could be collected on activated carbon or porous polymer during the initial site survey and exhaustively analyzed off-site to identify the major peaks within selected categories. This particular analysis, along with what is already known about a particular site, could provide enough information to select PHCs. Standards of PHCs could then be prepared and used to calibrate instruments used for field analysis of samples. Subsequent, routine, off-site analysis could be limited to scanning for only PHCs, saving time and resources. Special adsorbents and sampling conditions can be used for specific PHCs if desired while continued multi-media sampling provides a base for analysis of additional PHCs that may be identified during the course of cleanup operations.

Passive Dosimeters. A less traditional method of sampling is the use of passive dosimeters. The few passive dosimeters now available are for gases and vapors only. Although passive dosimeters are used primarily to monitor personal exposure, they also can be used to monitor areas. Passive monitors are divided into two groups:

- Diffusion samplers, in which molecules move across a concentration gradient, usually achieved within a stagnant layer of air, between the contaminated atmosphere and the indicator material.
- Permeation devices, which rely on the natural permeation of a contaminant through a membrane. A suitable membrane is selected that is easily permeated by the contaminant of interest and impermeable to all others. Permeation dosimeters, therefore, are useful in picking out a single contaminant from a mixture of possible interfering contaminants.

Some passive dosimeters may be read directly, as are DRIs and colorimetric length-of-stain tubes. Others require laboratory analysis similar to that conducted on solid sorbents.

EXHIBIT 6-2
Summary of Common Air Collection/Analytical Methods

Contaminant	Collection Media	Collection Method*	Analytical Method
Alcohols	Charcoal	NIOSH 1400 NIOSH 1401 NIOSH 1402	GC-FID
Aliphatic Amines	Silica Gel	NIOSH 2010	GC-FID
Aromatic Amines	Silica Gel	NIOSH 2002	GC-FID
Asbestos	25 mm 0.8 μm MCEF filter 25 mm 0.45 μm MCEF filter	NIOSH 7400 NIOSH 7402	PCM TEM
Cyanides	0.8 μm MCEF filter and impinger	NIOSH 7904	ISE
Dioxin	3" polyurethane foam plug/filter	EPA TO-9	GC/MS
Hydrocarbons: BP 36-126°C Aromatic Halogenated	Charcoal	NIOSH 1500 NIOSH 1501 NIOSH 1003	GC-FID EPA Modified GC/MS
Inorganic Acids	Washed Silica Gel	NIOSH 7903	IC
Mercury	Hopcolite/Hydrar	NIOSH 6009	AA
Metals (elements)	37 mm 0.8 μm MCEF filter	NIOSH 7300	ICP-AES
PCBs	Florisil® and 13 mm glass fiber filter	Lewis/McCleod Modified NIOSH 5503	GC-ECD
Pesticides/PCBs	3" polyurethane foam plug	EPA TO-4	GC-ECD
Polyaromatic Hydrocarbons (PAH)	Washed XAD-2, 37 mm PTFE filter w/support O-ring	NIOSH 5515	GC-PID
	2" x 1" Polyurethane Foam	NIOSH 5506	HPLC-UV
Volatile organics	Tenax®/carbonized molecular sieve (CMS)	EPA TO-1 EPA TO-2	GC-MS
Volatile organics	SUMMA® canister, SUMMA® canister w/critical orifice	EPA TO-14	GC-ECD, NPD or FID GC/MS

LEGEND:

AA:	Atomic Absorption
GC-ECD:	Gas Chromatography-Electron Capture Detector
GC-FID:	Gas Chromatography-Flame Ionization Detector
NPD:	Nitrogen-Phosphorus Detector
GC-MS:	Gas Chromatography
IC:	Ion Chromatography
ICP-AES:	Inductively Coupled Argon Plasma, Atomic Emission Spectroscopy
ISE:	Ion Specific Electrode
PCM	Phase Contrast Microscopy
TEM.	Transmission Electron Microscopy
HPLC-UV·	High-Pressure Liquid Chromatography with UV Detector

* **Note:** The flow rates that appear in the NIOSH methods are often modified for outdoor ambient air sampling.

6.5 GENERAL MONITORING PRACTICES

Air sampling should be conducted using a variety of media to identify the major classes of airborne contaminants and their concentrations. The following sampling pattern can be used as a guideline. After visually identifying the sources of possible generation, air samples should be collected downwind from the designated source along the axis of the wind direction. Work should proceed upwind to a point as close as possible to the source. Level B protection (see Section 6.9.3) should be worn during this initial sampling. Levels of protection for subsequent sampling should be based upon the results obtained and the potential for an unexpected release of chemicals.

After reaching the source, or finding the highest concentration, samples should be collected along the cross-axis of the wind direction to determine the degree of dispersion. Smoke plumes, or plumes of instrument-detectable airborne substances, may be released as an aid in this assessment. To ensure that there is no background interference and that the detected substance(s) originate from the identified source, air samples also should be collected upwind from the source.

6.5.1 Perimeter Monitoring

Fixed-location monitoring at the "fenceline" or perimeter, where PPE is no longer required, measures contaminant migration away from the site and enables the Site Health and Safety Officer to evaluate the integrity of the site's clean areas. Because the fixed-location samples may reflect exposures either upwind or downwind from the site, wind speed and direction data are needed to interpret the sample results.

6.5.2 Periodic Monitoring

Site conditions and atmospheric chemical conditions may change following the initial characterization. Periodic monitoring should be conducted when the possibility of a dangerous condition has developed or when there is reason to believe that exposures may have risen above PELs since prior monitoring was conducted. The possibility that exposures have risen should be seriously considered when:

- Work begins on a different portion of the site;
- Different contaminants are being handled;
- A markedly different type of operation is initiated (e.g., barrel opening as opposed to exploratory well drilling); or
- Workers are handing leaking drums or working in areas with obvious liquid contamination (e.g., a spill or lagoon).

6.5.3 Personal Monitoring

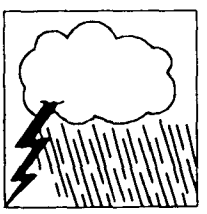
The selective monitoring of high-risk workers (i.e., those who are closest to the source of contaminant generation) is required by 29 CFR §1910. 120(h). This requirement is based on the probability that significant exposure varies directly with distance from the source. If workers closest to the source are not significantly exposed, then other workers, presumably, are not significantly exposed and should not need to be monitored.

Because occupational exposures are linked closely with active material handling, personal air sampling is not necessary until site operations have begun. Thus, monitoring of those employees likely to have the highest exposures to hazardous substances and health hazards is not required until the actual cleanup phase commences (e.g., when soils, surface waters, or containers are moved or disturbed). Personal monitoring samples should be collected in the breathing zone and, if workers are wearing respiratory protective equipment, outside the facepiece. These samples represent the actual inhalation exposure of workers who are not wearing respiratory protection and the potential exposure of workers who are wearing respirators. Sampling should occur frequently enough to characterize employee exposures. If any employee is exposed to concentrations over PELs, monitoring must continue to ensure the safety of all employees likely to be exposed to concentrations above those limits.

Personal monitoring may require the use of a variety of sampling media. Unfortunately, single workers cannot carry multiple sampling media because of the added strain and because it is not

usually possible to draw air through different sampling media using a single portable, battery-operated pump. Consequently, several days may be required to measure the exposure of a specific individual using each of the media. Alternatively, if workers are in teams, a different monitoring device can be assigned to each team member. Another method is to place multiple sampling devices on pieces of heavy equipment. While these are not personal samples, they can be collected very close to the breathing zone of the heavy equipment operator and thus would be reasonably representative of personal exposures. These multi-media samples can yield as much information as several personal samples.

6.6 METEOROLOGICAL CONSIDERATIONS



Meteorological information is an integral part of any air monitoring program. Data concerning wind speed and direction, temperature, barometric pressure, and humidity, singularly or in combination, are needed for selecting air sampling locations, calculating air dispersion, calibrating instruments, and determining population at risk of exposure from airborne contaminants.

Knowledge of wind speed and direction is necessary to effectively place air samplers. In source-oriented ambient air sampling, it is particularly important that samplers be located at varying distances downwind from the source. Similarly, it is important that background air samples be collected upwind from the source. Samplers should be relocated or adjusted to reflect shifts in wind direction. In addition, atmospheric simulation models for predicting contaminant dispersion and concentration need wind speed and direction as inputs for predictive calculations. Information may be needed concerning the frequency and intensity of winds from certain directions (windrose data). Consequently, wind direction must be monitored continually.

Air sampling systems need to be calibrated before use and corrections in the calibration curves made for temperature and pressure. After sampling, sampled air volumes should also be corrected for temperature and pressure variations. This requires data on air temperature and pressure during sampling.

Data may be collected from on-site meteorological stations or from government or private organizations that routinely collect meteorological data. The site manager should base data collection decisions on the availability of reliable data at the site, the resources needed to obtain meteorological equipment, the level of confidence required for the data, and the ultimate use of the data.

6.7 LONG-TERM AIR MONITORING PROGRAMS

A variety of long-term air monitoring programs can be designed to detect a wide range of airborne compounds. A number of factors should be considered before implementing any program, including type of equipment, costs, personnel, accuracy of analysis, time to obtain results (turn-around time), and availability of analytical laboratories.

One approach to air monitoring, developed and used by the ERT, is described here. This program achieves a reasonable balance between cost, accuracy, and time in obtaining data using a combination of DRIs and air sampling systems. The data is used to survey for airborne organic vapors and gases, to identify and measure organic vapors and gases, and to identify and measure particulates and inorganic vapors and gases. The ERT approach is based on:

- Using flame ionization detectors (FIDs) and/or photoionization detectors (PIDs) for initial detection of total organic gases and vapors and for periodic site surveys (for total organics). Equipped with strip chart recorders, the detectors are used as area monitors to record total organic concentrations and changes in concentration over a period of time. Calibrated to specific organic contaminants, they are used to detect and measure those substances.

- Collecting area air samples using personal pumps and organic gas/vapor collection tubes. Samples are analyzed using the gas chromatograph (GC) capabilities of field instruments. Selected samples are also

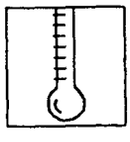
analyzed in laboratories accredited by the American Industrial Hygiene Association (AIHA).

- Using PIDs and/or FIDs (as a survey instrument or GC) to provide real-time data and to screen the number of samples needed for laboratory analysis.

- Sampling for particulates, inorganic acids, aromatic amines, halogenated pesticides, etc., when they are known to be present or when there are indications that these substances may be a problem.

6.8 VARIABLES IN HAZARDOUS WASTE SITE AIR MONITORING

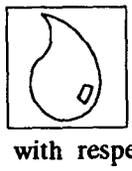
Complex environments involving numerous substances, such as those associated with hazardous waste sites, pose significant challenges to accurately and safely assessing airborne contaminants. Several independent and uncontrollable variables, most notably temperature and weather conditions, can affect airborne concentrations. These factors must be considered when developing an air monitoring program and when analyzing data. Some of the more important variables include:



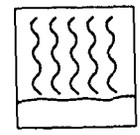
Temperature. An increase in temperature increases the vapor pressure of most chemicals.

Wind Speed. An increase in wind speed can affect vapor concentrations near a free-standing liquid surface. Dusts and particulate-bound contaminants are also affected.

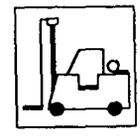
Rainfall. Water from rainfall can essentially cap or plug vapor emission routes from open or closed containers, saturated soil, or lagoons, thereby reducing airborne emissions of certain substances.



Moisture. Dusts, including finely divided hazardous solids, are highly sensitive to moisture content. This moisture content can vary significantly with respect to location and time and can also affect the accuracy of many sampling results.



Vapor Emissions. The physical displacement of saturated vapors can produce short-term, relatively high, vapor concentrations. Continuing evaporation and/or diffusion may produce long-term low vapor concentrations and may involve large areas.



Work Activities. Work activities often require the mechanical disturbance of contaminated materials, which may change the concentration and composition of airborne contaminants.

6.9 USING VAPOR/GAS CONCENTRATIONS TO DETERMINE LEVEL OF PROTECTION

The objective of using total atmospheric vapor/gas concentrations is to determine a numerical criterion for selecting the appropriate level of PPE (e.g., Level A, B, or C). In situations where the presence of vapors or gases is not known, or if present, the individual components are unknown, personnel required to enter that environment must be protected. Total vapor/gas concentration can be used as a guide for selecting PPE until more definitive criteria can be determined (e.g., until the constituents and atmospheric concentrations of vapor, gas, or particulates can be determined, and until respiratory and body protection can be chosen that relate to the toxicological properties of these constituents.)

Although total vapor/gas concentration measurements are useful to a qualified professional for the selection of protective equipment, caution should be exercised in their interpretation. An instrument does not respond with the same sensitivity to several vapor/gas contaminants as it does to a single contaminant. Also, because total vapor/gas field instruments detect all contaminants in relation to a specific calibration gas, the concentration of unknown gases or vapors may be either overestimated or underestimated.

Suspected carcinogens, particulates, highly hazardous substances, infectious wastes, or other substances that do not elicit an instrument response may be known or suspected to be present. Therefore, the protection level should not be based solely on the total vapor/gas criterion. Rather, the

level should be selected on a case-by-case basis, with special emphasis on potential exposure from the chemical and toxicological characteristics of the known or suspected material.

6.9.1 Factors for Consideration

A number of factors should be considered when using total atmospheric vapor/gas concentrations as a guide for monitoring a selected Level of Protection. First, the uses, limitations, and operating characteristics of the monitoring instruments must be recognized and understood. Instruments such as the photoionization detector (PID), flame ionization detector (FID), and others do not respond identically to the same concentration of a substance; nor do they respond to all substances. Therefore, experience, knowledge, and good judgement must be used to complement the data obtained with instruments.

Second, other hazards may exist such as gases not detected by the PID or FID (i.e., phosgene, cyanides, arsenic, chlorine), explosives, flammable materials, oxygen deficiency, liquid/solid particles, and liquid or solid chemicals. Vapors and gases with a very low Threshold Limit Value (TLV) or IDLH value could also be present. Total readings on instruments not calibrated to these substances may not indicate unsafe conditions.

The risk to personnel entering an area must be weighed against the need for entering. Although this assessment is largely a value judgment, it requires a conscientious balancing of the known and potential risks to personnel against the need to enter an unknown environment.

The knowledge that suspected carcinogens or extremely toxic substances are present requires an evaluation of a number of factors, such as the potential for exposure, chemical characteristics of the materials present, and the limitations of monitoring instruments and PPE relative to the tasks that must be done on-site.

On-site activities must be evaluated to choose the correct level of PPE. Based upon total atmospheric vapor concentrations, Level C protection may be judged adequate; however, tasks such as moving drums, opening containers, and bulking of materials, which increase the probability of liquid splashes or generation of vapors, gases, or particulates, will likely require a higher level of protection.

The following sections provide information on levels of protection (refer to **Chapter 5** for more information on selecting PPE).

6.9.2 Level A Protection (500 to 1,000 ppm)

Level A protection provides the highest degree of respiratory tract, skin, and eye protection if the inherent limitations of the PPE are not exceeded. Although Level A provides protection against air concentrations greater than 1,000 ppm for most substances, an operational restriction of 1,000 ppm is established as a warning flag to:

- Evaluate the need to enter environments with unknown constituents at concentrations greater than 1,000 ppm;
- Identify the specific chemical constituents contributing to the total concentration and their associated toxic properties;
- Determine more precisely the concentrations of constituent chemicals;
- Evaluate the calibration and/or sensitivity error associated with the instrument(s); and
- Evaluate instrument sensitivity to wind velocity, humidity, temperature, etc.

A limit of 500 ppm total vapors/gases in air was selected as the value at which to upgrade from Level B to Level A. This concentration was selected to fully protect the skin until the constituents can be identified and measured and substances affecting the skin are excluded. The range of 500 to 1,000 ppm is sufficiently conservative to provide a safe margin of protection if readings are low due to instrument error, calibration, and sensitivity; if higher than anticipated concentrations occur; and if substances highly toxic to the skin are present.

Ambient air concentrations approaching 500 ppm have not routinely been encountered on hazardous waste sites. Such high concentrations have been encountered only in closed buildings, when containers were being opened, when personnel were working in the spilled contam-

inants, or when organic vapors/gases were released in transportation accidents. A decision to require Level A protection should also consider the negative aspects: higher probability of accidents due to cumbersome equipment, and most importantly, the physical stress caused by heat buildup in fully encapsulating suits.

6.9.3 Level B Protection (5 to 500 ppm)

Level B protection is the minimum level of protection recommended for initially entering an open site where the type, concentration, and presence of airborne vapors are unknown. This level of protection provides a high degree of respiratory protection. Skin and eyes are also protected, although a small portion of the body (neck and sides of head) may be exposed. The use of a separate hood or hooded, chemical-resistant jacket would further reduce the potential for exposure to this area of the body. Level B impermeable protective clothing also increases the probability of heat stress.

A limit of 500 ppm total atmospheric vapor/gas concentration on portable field instruments has been selected as the upper restriction on the use of Level B. Although Level B PPE should be adequate for most commonly encountered substances at air concentrations higher than 500 ppm, this limit has been selected as a decision point for a careful evaluation of the risks associated with higher concentrations. The following factors should be considered when selecting Level B protection:

- The necessity for entering environments with unknown constituents at concentrations higher than 500 ppm wearing Level B protection;
- The probability that substance(s) present pose severe skin hazards;
- The work to be done and the increased probability of exposure;
- The need for qualitative and quantitative identification of the specific components;
- Inherent limitations of the instruments used for air monitoring; and
- Instrument sensitivity to winds, humidity, temperature, and other factors.

6.9.4 Level C Protection (Background to 5 ppm)

Level C provides skin protection identical to Level B, assuming the same type of chemical protective clothing is worn, but lesser protection against inhalation hazards. A range of background to 5 ppm above ambient background concentrations of vapors/gases in the atmosphere has been established as guidance for selecting Level C protection. Concentrations in the air of unidentified vapors/gases approaching or exceeding 5 ppm would warrant upgrading respiratory protection to a self-contained breathing apparatus.

A full-face, air-purifying mask equipped with an organic vapor canister (or a combined organic vapor/particulate canister) provides protection against low concentrations of most common organic vapors/gases. There are some substances against which full-face, canister equipped masks do not protect, for example, substances with very low Threshold Limit Values (TLV) or IDLH concentrations. Many of the latter substances are gases or liquids in their normal state. Gases would only be found in gas cylinders, while the liquids would not ordinarily be found in standard containers or drums.

Every possible effort should be made to identify the individual constituents (and the presence of particulates) contributing to such low total vapor readings. Respiratory protective equipment can then be selected accordingly. It is exceedingly difficult, however, to provide constant, real-time identification of all components with concentrations of less than 5 ppm in a vapor cloud at a site where ambient concentrations are constantly changing.

If highly toxic substances have been ruled out, but ambient levels of less than 5 ppm persist, it is unreasonable to assume only self-contained breathing apparatus should be worn. The continuous use of air-purifying masks in such low vapor/gas concentrations gives a reasonable assurance that the respiratory tract is protected, provided that the absence of highly toxic substances has been confirmed.

Full-face, air-purifying devices are capable of providing respiratory protection against most vapors at greater than 5 ppm; however, until definitive qualitative information is available, a concentration of greater than 5 ppm requires that a higher level of respiratory protection be used.

Also, unanticipated transient excursions may increase the concentrations in the environment above the limits of air-purifying devices. The increased probability of exposure due to the work being done may require Level B protection, even though ambient levels are low.

FURTHER GUIDANCE: For more information on air monitoring equipment and procedures, see:

1. *Standard Operating Guide for Air Sampling and Monitoring at Emergency Responses* (U.S. EPA, draft, Publication 9285.2-03A).

2. *Standard Operating Guide for the Use of Air Monitoring Equipment for Emergency Response* (U.S. EPA, draft, expected Summer 1992).

3. *Manual of Analytical Methods, (Volumes 1-3, 3rd Edition, with supplements)* (NIOSH, 1989, Publication 89-127).

4. *Compendium of Methods for Determination of Toxic Organic Compounds in Air* (U.S. EPA, 1987, EPA 600/4-87/006).

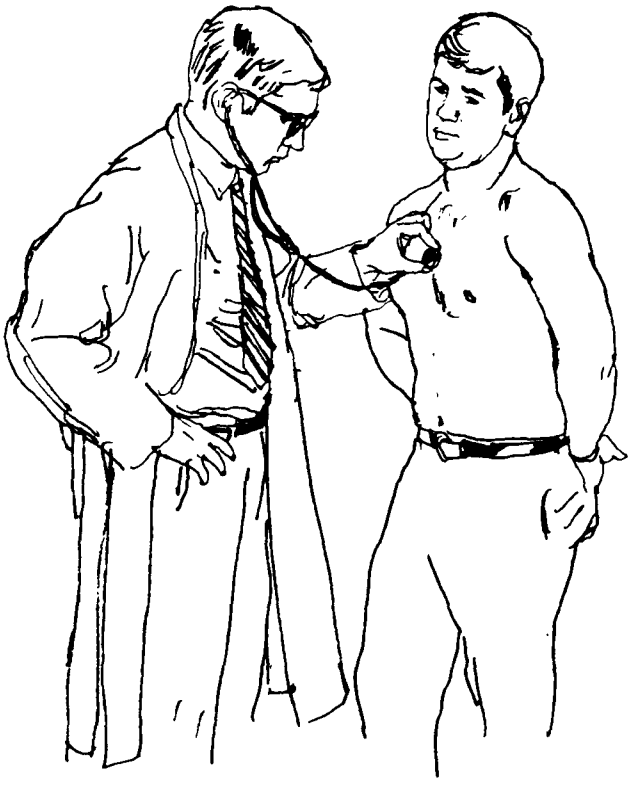
5. *OSHA Analytical Methods.* The OSHA Technical Center maintains an updated database of analytical testing methods. Printouts of analytical methods for individual chemicals are available by request. Contact the OSHA Technical Center, 1781 South 300 West, Salt Lake City, UT, 84115 (801) 524-5287.

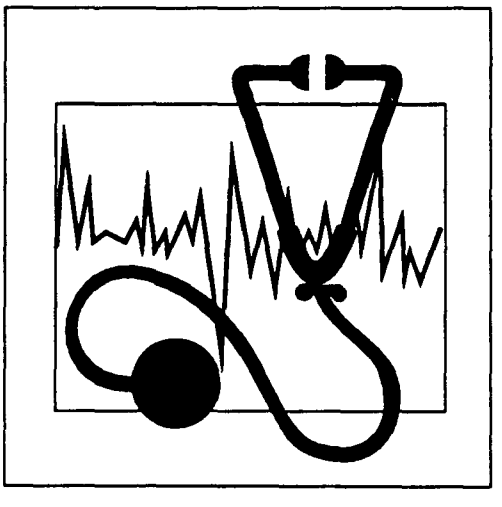
6. Air Methods Database. Available on the Cleanup Information electronic bulletin board (CLU-IN), formerly OSWER BBS. For further information, call (301) 589-8366. Communications: No Parity, 8 Databits, 1 Stopbit, F Duplex.

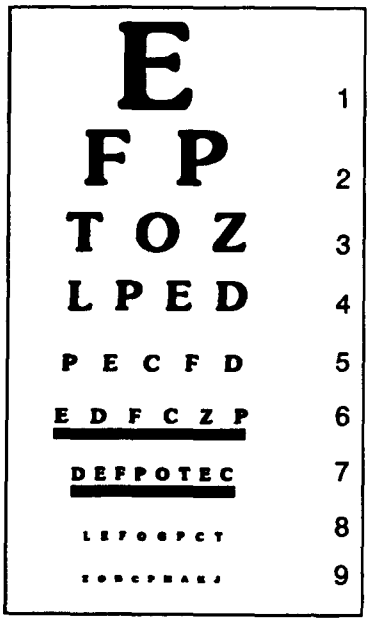
7. *Removal Program Representative Sampling Guidance: Air* (U.S. EPA, draft, expected Summer 1992).

8. *Respiratory Decision Logic* (NIOSH, 1987, Publication 87-108).

CHAPTER 7 MEDICAL SURVEILLANCE PROGRAM

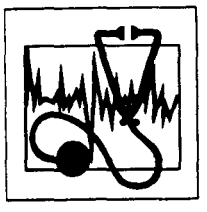






CHAPTER 7 MEDICAL SURVEILLANCE PROGRAM

7.0 INTRODUCTION



Workers engaged in hazardous waste operations and emergency response activities perform tasks that may expose them to a number of potential hazards, including: toxic chemicals; safety and biological hazards; and physical agents, such as heat stress and radiation. A medical program is essential for assessing and monitoring employee health, both prior to placement and during the course of work; for providing emergency and other treatment, as needed; and for keeping accurate records for future reference. A comprehensive medical surveillance program is required by §1910.120(f) of HAZWOPER. The standards contain provisions for baseline, periodic, and termination medical examinations.

The goal of a medical surveillance program, and of appropriate screening and monitoring in the workplace, is the protection of employees' health. Two factors are critical for achieving this goal:

- Detecting pre-existing disease or medical conditions that may place an employee performing certain tasks at an increased risk; and
- Minimizing individual exposures at the workplace, so that the disease process is never initiated.

Helping to place and maintain employees in work that is commensurate with their capabilities and, whenever possible, attempting to avoid certain exposure situations, will help achieve this goal of disease prevention.

An employer should develop a comprehensive medical program based on the specific needs, location, and potential exposures of its employees. The program should be designed by an experienced occupational health physician or other qualified occupational health consultant in conjunction with the employer's occupational health and safety professional. All occupational medical monitoring examinations and procedures should be performed by or under the direction of a physician who is board-certified in occupational medicine or a medical doctor who has had extensive experience managing occupational health services.

7.1 EMPLOYEES COVERED BY THE SURVEILLANCE PROGRAM

A medical surveillance program must include monitoring for four groups of employees:

- Employees who are, or may be, exposed to PELs of hazardous substances or health hazards for 30 or more days per year;
- Employees who wear a respirator for 30 or more days per year;
- Members of organized HAZMAT teams; and
- Employees who are injured as a result of overexposure during a site emergency, or who show symptoms of illness that may have resulted from exposure to hazardous substances.

OSHA standards represent only the minimum that is required by law and in no way preclude anyone from taking additional actions to ensure the well-being of their employees. For example, the medical surveillance policy for EPA employees (as outlined in the *OSWER Integrated Health and Safety Program Standard Operating Practice*) is more restrictive than the OSHA standards, and requires monitoring for employees who are potentially exposed to hazardous substances for 20 or more days per year.

7.2 FREQUENCY AND CONTENT OF MEDICAL EXAMINATIONS

All employees who are required by HAZWOPER to participate in a medical surveillance program must undergo a baseline medical examination prior to a field assignment. After this initial examination, employees must have a follow-up medical exam at least once per year, unless an attending physician believes a longer interval is appropriate. This longer interval, however, cannot exceed 2 years.

If the attending physician believes it is necessary by virtue of the nature of employees' potential exposure, more frequent medical examinations may be required. Irrespective of whether a baseline exam was performed, employees must also receive a medical examination as soon as possible if:

- The employee is injured or becomes ill from exposure to hazardous substances on-site; or
- The employee develops signs or symptoms indicative of possible overexposure to hazardous substances.

All potentially exposed employees must be trained to recognize symptoms that might be indicative of overexposure to chemicals or physical agents such as heat stress. These could include dizziness, rashes, shortness of breath, numbness, and fatigue.

In addition, employees who are reassigned or who terminate employment must receive a final examination. This examination is only required if the employee has not had an examination within the past 6 months. All required medical examinations must be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

The content of medical examinations should be determined by the attending physician and the site Health and Safety Officer, but certain key elements must be included. The physician must complete a medical and work history with emphasis on the symptoms related to handling hazardous substances. Further, the physician must determine the employee's fitness for the types of duties to be assigned, including whether the employee needs to wear personal protective equipment based on the anticipated conditions at the work site.

To ensure that the physician understands the OSHA and EPA medical surveillance requirements, the employer must provide a copy of the standard and its appendices to the physician. Substance-specific standards (e.g., for lead and asbestos) should also be provided, if appropriate. The employer is also responsible for describing to the physician each employee's duties relative to potential exposure levels. Additionally, the physician must be provided with information from the employee's previous medical exams and a complete description of the types of PPE that the employee will be expected to wear. This information is required so that the physician can adequately assess the employee's capacity to wear PPE and other required equipment.

Once an exam has been completed, the physician must submit a written opinion to the employer who then has the responsibility to provide that opinion to the employee. The opinion must contain:

- The results of the medical examination and tests;
- Any recommended work limitations; and
- The physician's opinion concerning the medical condition of the employee, including any conditions that need further examination and treatment, or that would place the employee at an increased risk of injury from respirator use or work in a hazardous substance environment.

Exhibit 7-1 outlines a recommended medical program with screening and examination protocols. These recommendations are based on known health risks for hazardous waste site personnel, a review of available data on their exposures, and an assessment of several established medical programs. Because conditions and hazards vary considerably at each site, only general guidelines are provided here.

7.2.1 Baseline Screening

Pre-placement or baseline screening has two major functions: (1) to determine an individual's fitness for duty, including the ability to work while wearing protective equipment; and (2) to provide baseline data for comparison with future medical data. To ensure that prospective employees are able to meet work requirements, the pre-placement screening should focus on the following areas:

Occupational and Medical History

- Require all personnel to fill out an occupational and medical history questionnaire, describing all prior occupational exposures to chemical and physical hazards.

EXHIBIT 7-1
Minimum Examination Types and Protocols

Examination Type	Baseline	Periodic	Termination	Unscheduled
History and Physical Exam				
Complete Medical History	X		X	X
Interval History		X		
Physical Examination by Physician	X	X	X	X
Visual Acuity	X	X	X	O
Routine Laboratory Tests/Procedures				
Pulmonary Function	X	X	X	O
Audiometry	X	X	X	O
Electrocardiogram	X	O	X	O
Chest X-ray*	X	O	X	O
Complete Blood Count	X	X	X	O
Routine Urinalysis	X	X	X	O
Blood Chemistry	X	X	X	O
Special Tests**				
Cholinesterase	X	O	O	O
Methemoglobin	O	O	O	O
Heavy Metal Screen	X	O	O	O
Urine and Sputum Cytology	O	O	O	O
Polychlorinated Biphenyl (PCB)	O	O	O	O
Cardiovascular Stress Test	X	O	-	-

X Recommended
O As indicated

* Chest X-rays not repeated more than once per year.

** Any special test which may be considered on a periodic basic should be included in the baseline test.

Source: *Occupational Medical Monitoring Program Guidelines for SARA Hazardous Waste Field Activity Personnel* (U.S. EPA, 1990, Publication 9285.3-04).

- Take note of past illnesses and chronic diseases, particularly atopic diseases such as eczema and asthma, lung diseases, and cardiovascular disease.

- Review symptoms, especially shortness of breath or labored breathing on exertion, other chronic respiratory symptoms, chest pain, high blood pressure, heat intolerance, or sensitivity to particular substances.

- Record relevant lifestyle habits (e.g., smoking, alcohol/drug use) and hobbies.

Physical Examination

- Conduct a comprehensive physical examination focusing on the pulmonary, cardiovascular, and musculoskeletal systems.

- Note conditions that could increase susceptibility to heat stroke or that could affect respirator use.

Ability to Work While Wearing PPE

- Disqualify individuals who are unable to perform based on the medical history and physical exam (e.g., those with severe lung disease, heart disease, or back or orthopedic problems).

- Note limitations concerning the worker's ability to use PPE.

- Provide additional testing for ability to wear PPE where necessary.

- Complete a written assessment of worker's capacity to perform while wear a respirator, if wearing a respirator is a job requirement. Note that the OSHA respirator standard (29 CFR §1910.134) states that no employee should be assigned to a task that requires the use of a respirator unless that person is physically able to perform under such conditions.

Pre-placement screening can be used to establish baseline data to verify the efficacy of protective measures and to determine whether exposures have adversely affected the worker. Baseline testing may include both medical screening tests and biologic monitoring tests. Given the problem in predicting significant exposures for these workers, there are no clear guidelines for prescribing specific tests.

7.2.2 Periodic Medical Examinations

Periodic medical examinations should be developed and used in conjunction with pre-placement screening examinations. Comparison of sequential medical reports with baseline data is essential for determining biologic trends that may mark early signs of adverse health effects, and thereby facilitate appropriate protective measures.

The frequency and content of examinations will vary, depending on the nature of the work and exposures. It is recommended that medical examinations be conducted at least annually; however, more frequent examinations may be necessary depending on the extent of potential or actual exposure, the type of chemicals involved, the duration of the work assignment, and the individual worker's profile. Periodic screening exams can include:

- Interval medical history, focusing on changes in health status, illnesses, and possible work-related symptoms;

- Physical examination; and

- Additional medical testing, depending on available exposure information, medical history, and examination results. Testing specific to possible medical effects of the worker's exposure can include pulmonary function tests, audiometric tests, vision tests, and blood and urine tests.

7.2.3 Termination Examination

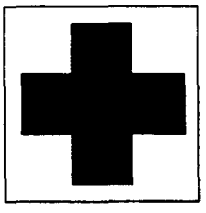
At the end of employment as a hazardous waste site worker, all personnel should have a termination medical examination. A full examination is necessary at the termination of employment if any of the following criteria are not met:

- The last full medical examination was within the last 6 months;

- No exposure occurred since the last examination; and

- No symptoms associated with exposure occurred since the last examination.

7.3 EMERGENCY TREATMENT



Provisions for emergency treatment and acute non-emergency treatment should be made at each site. When developing plans, procedures, and equipment lists, the range of actual and potential hazards specific to the site should be considered, including chemical, physical, and biological hazards. Contractors, visitors, and other personnel may require emergency treatment in addition to site workers.

Emergency medical treatment should be integrated into the overall site emergency response program. **Exhibit 7-2** lists the recommended guidelines for establishing an emergency treatment program. Depending on the site's location and potential hazards, it may be important to identify additional medical facilities capable of sophisticated response to chemical or other exposures.

Non-emergency medical care should be arranged for hazardous waste site personnel who are experiencing health effects resulting from an exposure to hazardous substances. In conjunction with the medical surveillance program, off-site medical care should ensure that any potential job-related symptoms or illnesses are evaluated in the context of the employee's exposure. Off-site medical personnel should also investigate and treat non-job-related illnesses that may put the employee at risk because of task requirements.

7.4 CHEMICAL CONTAMINATION

Employees at hazardous waste sites may be exposed to a number of toxic chemicals with dangerous properties. Most sites contain a variety of chemical substances in gaseous, liquid, or solid forms that can enter the unprotected body. **Exhibit 7-3** lists some common chemicals found at hazardous waste sites, their potential health effects, and recommended medical procedures for monitoring employee exposure.

Preventing exposure to toxic chemicals is a primary concern at any site. Protective clothing and respirators help prevent the wearer from contamination, and good work practices and engineering controls help reduce contamination on protective clothing, instruments, and equipment.

EXHIBIT 7-2
Recommended Guidelines for Establishing an Emergency Treatment Program

- ✓ Train a team of site personnel in emergency first aid, including CPR and training that emphasizes treatment for explosion and burn injuries, heat stress, and acute chemical toxicity. This team should include an emergency medical technician if possible.
- ✓ Train personnel in emergency decontamination procedures in coordination with the Emergency Response Plan (see **Chapter 9**).
- ✓ Predesignate roles and responsibilities to be assumed by personnel in an emergency.
- ✓ Establish an emergency/first-aid station on-site, capable of providing stabilization for patients requiring off-site treatment and general first aid.
- ✓ Arrange for a physician who can be paged on a 24-hour basis.
- ✓ Set up an on-call team of medical specialists for emergency consultations (e.g., a toxicologist, dermatologist, hematologist, allergist, ophthalmologist, cardiologist, and neurologist).
- ✓ Establish a protocol for monitoring heat stress.
- ✓ Make plans in advance for emergency transportation to and contamination control procedures for treatment at a nearby medical facility.
- ✓ Post names, phone numbers, addresses, and procedures for contacting on-call physicians, medical specialists, ambulance services, medical facilities, emergency, fire, and police services, and poison control hotline.
- ✓ Provide maps and directions to medical facilities, and confirm that all managers and individuals involved in medical response know the location of the nearest emergency medical facility.
- ✓ Establish a radio-communication system for emergency use.
- ✓ Review emergency procedures daily with site personnel at safety meetings before beginning work shifts.

EXHIBIT 7-3
Common Chemical Toxicants Found at Hazardous Waste Sites, their Health Effects, and Medical Monitoring[a]

HAZARDOUS SUBSTANCE OR CHEMICAL GROUP	COMPOUNDS	USES	TARGET ORGANS	POTENTIAL HEALTH EFFECTS	MEDICAL MONITORING
Aromatic Hydrocarbons	Benzene Ethyl benzene Toluene Xylene	Commercial solvents and intermediates for synthesis in the chemical and pharmaceutical industries.	Blood Bone marrow CNS[b] Eyes Respiratory system Skin Liver Kidney	All cause: CNS[b] depression: decreased alertness, headache, sleepiness, loss of consciousness. Defatting dermatitis Benzene suppresses bone-marrow function, causing blood changes. Chronic exposure can cause leukemia Note: Because other aromatic hydrocarbons may be contaminated with benzene during distillation, benzene-related health effects should be considered when exposure to any of these agents is suspected.	Occupational/general medical history emphasizing prior exposure to these or other toxic agents. Medical examination with focus on liver, kidney, nervous system, and skin Laboratory testing: CBC[c] Platelet count Measurement of kidney and liver function
Asbestos (or asbestiform particles)		A variety of industrial uses, including: Building Construction Cement work Insulation Fireproofing Pipes and ducts for water, air, and chemicals Automobile brake pads and linings	Lungs Gastrointestinal system	Chronic effects. Lung cancer Mesothelioma Asbestosis Gastrointestinal malignancies Asbestos exposure coupled with cigarette smoking has been shown to have a synergistic effect in the development of lung cancer.	History and physical examination should focus on the lungs and gastrointestinal system. Laboratory tests should include a stool test for occult blood evaluation as a check for possible hidden gastrointestinal malignancy. A high quality chest X-ray and pulmonary function test may help to identify long-term changes associated with asbestos diseases; however, early identification of low-dose exposure is unlikely.
Dioxin (see Herbicides)					

[a] Source *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985)

[b] CNS = Central nervous system.
[c] CBC = Complete blood count

EXHIBIT 7-3 (cont'd)
Common Chemical Toxicants Found at Hazardous Waste Sites, their Health Effects, and Medical Monitoring[a]

HAZARDOUS SUBSTANCE OR CHEMICAL GROUP	COMPOUNDS	USES	TARGET ORGANS	POTENTIAL HEALTH EFFECTS	MEDICAL MONITORING
Aromatic Hydrocarbons	*Benzene* Ethyl benzene *Toluene* Xylene	Commercial solvents and intermediates for synthesis in the chemical and pharmaceutical industries.	Blood Bone marrow CNS[b] Eyes Respiratory system Skin Liver Kidney	All cause: CNS[b] depression: decreased alertness, headache, sleepiness, loss of consciousness. Defatting dermatitis. Benzene suppresses bone-marrow function, causing blood changes. Chronic exposure can cause leukemia. Note: Because other aromatic hydrocarbons may be contaminated with benzene during distillation, benzene-related health effects should be considered when exposure to any of these agents is suspected.	Occupational/general medical history emphasizing prior exposure to these or other toxic agents. Medical examination with focus on liver, kidney, nervous system, and skin. Laboratory testing: CBC[c] Platelet count Measurement of kidney and liver function.
Asbestos (or asbestiform particles)		A variety of industrial uses, including: Building Construction Cement work Insulation Fireproofing Pipes and ducts for water, air, and chemicals Automobile brake pads and linings	Lungs Gastrointestinal system	Chronic effects: Lung cancer Mesothelioma Asbestosis Gastrointestinal malignancies Asbestos exposure coupled with cigarette smoking has been shown to have a synergistic effect in the development of lung cancer.	History and physical examination should focus on the lungs and gastrointestinal system. Laboratory tests should include a stool test for occult blood evaluation as a check for possible hidden gastrointestinal malignancy. A high quality chest X-ray and pulmonary function test may help to identify long-term changes associated with asbestos diseases; however, early identification of low-dose exposure is unlikely.
Dioxin (see Herbicides)					

[a] Source *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985).

[b] CNS = Central nervous system.
[c] CBC = Complete blood count.

EXHIBIT 7-3 (cont'd)
Common Chemical Toxicants Found at Hazardous Waste Sites, their Health Effects, and Medical Monitoring (cont'd)

HAZARDOUS SUBSTANCE OR CHEMICAL GROUP	COMPOUNDS	USES	TARGET ORGANS	POTENTIAL HEALTH EFFECTS	MEDICAL MONITORING
Herbicides	Chlorophenoxy compounds. 2,4-dichloro-phenosyacetic acid (2,4-D) 2,4,5-trichloro-phenoxyacetic acid (2,4,5-T) Dioxin (tetrachloro-dibenzo-p-dioxin, TCDD), which occurs as a trace contaminant in these compounds, poses the most serious health risk.	Vegetation control	Kidney Liver CNS[a] Skin	Chlorophenoxy compounds can cause chloracne, weakness or numbness of the arms and legs, and may result in long-term nerve damage. Dioxin causes chloracne and may aggravate pre-existing liver and kidney diseases.	History and physical exam should focus on the skin and nervous system Laboratory tests include: Measurement of liver and kidney function, where relevant. Urinalysis.
Organochlorine Insecticides	Chlorinated ethanes: DDT Cyclodienes. Aldrin Chlordane Dieldrin Endrin Chlorocyclohexanes: Lindane	Pest control	Kidney Liver CNS[a]	All cause acute symptoms of apprehension, irritability, dizziness, disturbed equilibrium, tremor, and convulsions. Cyclodienes may cause convulsions without any other initial symptoms. Chlorocyclohexanes can cause anemia. Cyclodienes and chlorocyclohexanes cause liver toxicity and can cause permanent kidney damage.	History and physical exam should focus on the nervous system. Laboratory tests include: Measurement of kidney and liver function. CBC[b] for exposure to chlorocyclohexanes.

EXHIBIT 7-3 (cont'd)
Common Chemical Toxicants Found at Hazardous Waste Sites, their Health Effects, and Medical Monitoring (cont'd)

HAZARDOUS SUBSTANCE OR CHEMICAL GROUP	COMPOUNDS	USES	TARGET ORGANS	POTENTIAL HEALTH EFFECTS	MEDICAL MONITORING
Organophosphate and Carbamate Insecticides	Organophosphate: Diazinon Dichlorovos Dimethoate Trichlorfon Malathion Methyl parathion Parathion Carbamate. Aldicarb Baygon Zectran	Pest control	CNS[a] Liver Kidney	All cause a chain of internal reactions leading to neuromuscular blockage. Depending on the extent of poisoning, acute symptoms range from headaches, fatigue, dizziness, increased salivation and crying, profuse sweating, nausea, vomiting, cramps, and diarrhea to tightness in the chest, muscle twitching, and slowing of the heartbeat. Severe cases may result in rapid onset of unconsciousness and seizures. A delayed effect may be weakness and numbness in the feet and hands Long-term, permanent nerve damage is possible.	Physical exam should focus on the nervous system. Laboratory tests should include RBC[e] cholinesterase levels for recent exposure (plasma cholinesterase for acute exposures). Measurement of delayed neurotoxicity and other effects.
Polychlorinated Biphenyls (PCBs)		Wide variety of industrial uses	Liver CNS[a] (speculative) Respiratory system (speculative) Skin	Various skin ailments, including chloracne; may cause liver toxicity; carcinogenic to animals.	Physical exam should focus on the skin and liver Laboratory tests include Serum PCB levels. Triglycerides and cholesterol Measurement of liver function

[e] RBC = Red blood count.

However, contamination can occur even with these safeguards. It is important to identify the chemical hazards that exist at a site, and to take steps to prevent contamination.

Chemical exposures are generally divided into two categories: acute and chronic. Symptoms resulting from acute exposures usually occur during and shortly after exposure to a high concentration of a contaminants. A chronic exposure usually occurs at a low concentration over a long period of time. Lethal concentrations vary with each chemical. The symptoms of an acute exposure for a given contaminant may be completely different from those resulting from a chronic exposure to the same contaminant.

For chronic and acute exposures, the toxic effect may be temporary and reversible or permanent (causing disability or death). Although some chemicals cause obvious symptoms (e.g., burning, nausea, rashes), others may causes health damage without any warning signs (e.g., cancer, respiratory disease). Some toxic chemicals may be colorless and/or odorless, may dull the sense of smell, or may not produce immediate or obvious physiological sensation. A worker's senses or feelings cannot be relied upon in all cases to warn of toxic exposures. **Exhibit 7-4** lists the signs and warning symptoms of potential chemical exposure.

The primary routes of chemical contamination are as follows:

Inhalation is an exposure route of concern because the lungs are extremely vulnerable to chemical agents. Respiratory protection should be used if there is any possibility that the site may contain hazardous substances that can be inhaled. Chemicals can also enter the respiratory tract through punctured eardrums.

Direct contact of the skin and eyes is another route of exposure to hazardous substances. Some chemicals will directly injure the skin; some may pass through the skin into the bloodstream where they are transported to vulnerable organs. This absorption is enhanced by abrasions, cuts, heat, and moisture. Workers can protect against direct contact of a hazardous chemical by wearing PPE, refraining from use of contact lenses in contaminated atmospheres, keeping hands away from the face, and minimizing contact with liquid and solid chemicals.

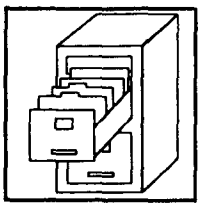
Ingestion occurs when chemicals are accidentally swallowed.

Injection can occur when chemicals are introduced into the body through puncture wounds, such as those caused by stepping or tripping or falling onto contaminated sharp objects. To protect against this type of exposure, the site should be prepared, and workers should wear safety shoes, avoid physical hazards, and take common sense precautions.

EXHIBIT 7-4
Signs and Symptoms of Chemical Contamination

- Behavioral changes
- Breathing difficulties
- Changes in complexion or skin color
- Coordination difficulties
- Coughing
- Dizziness
- Drooling, pupillary response
- Diarrhea
- Fatigue and/or weakness
- Irritability
- Irritation of eyes, nose, respiratory tract, skin or throat
- Headache
- Light-headedness
- Nausea
- Sneezing
- Sweating
- Tearing
- Blurred vision
- Cramps
- Tightness in the chest

7.5 MEDICAL RECORDS AND PROGRAM REVIEW



Medical records for employees must be maintained for at least 30 years after employment is terminated. These records must include the name and social security number of the employee, the physician's written opinions including recommended occupational limitations and results of examinations and tests, any employee medical complaints related to occupational hazardous substance exposure, and a copy of the material that the attending physician was provided before the examination. The employer is responsible for retaining the records if the employee or physician leaves the area, or if the company moves, is acquired, or goes out of business. In addition, employers who maintain 11 or more employees must keep injury and illness records for each establishment. Employers are also required to provide access to these records upon request by the employee or designated representative.

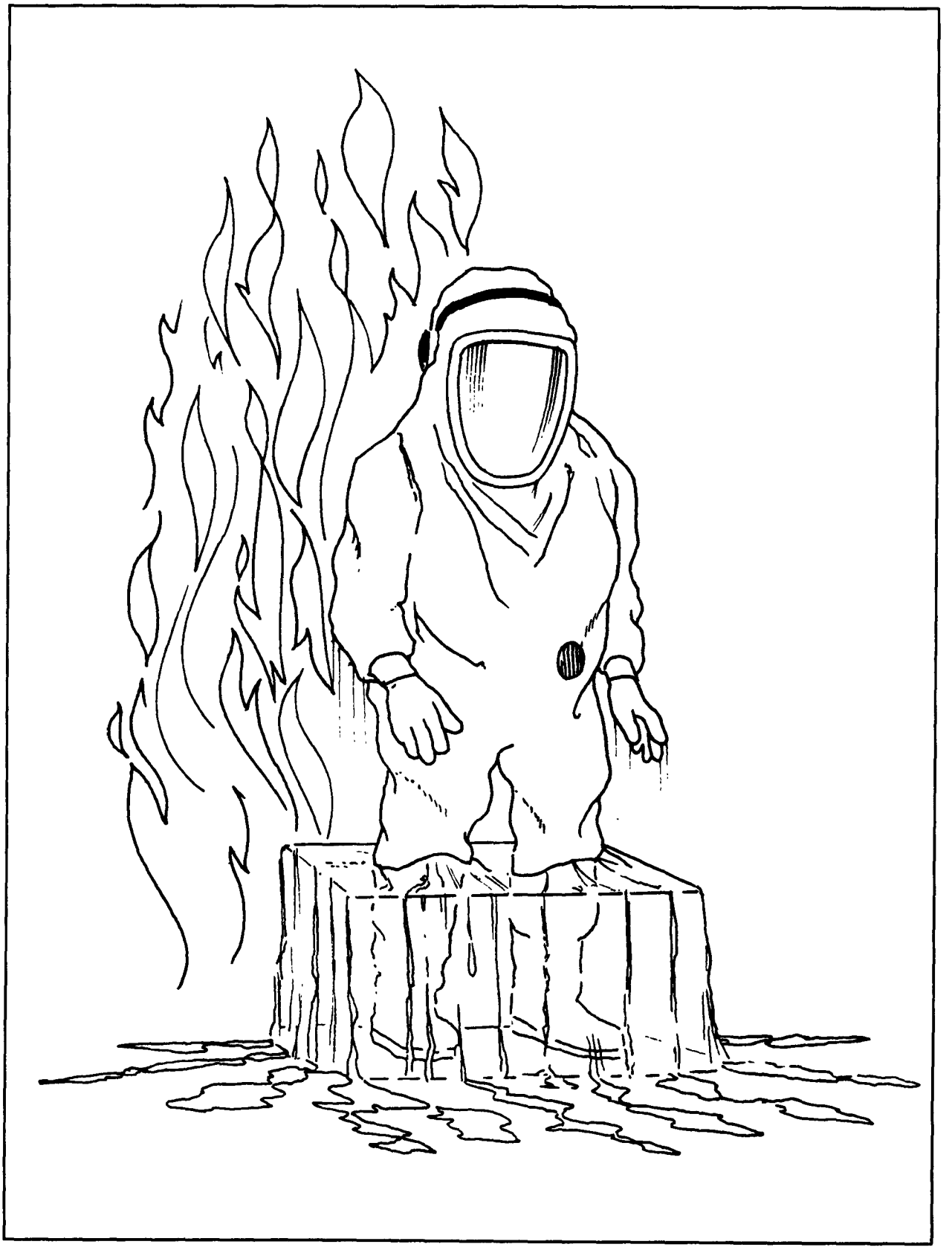
The medical surveillance program must be evaluated regularly to ensure its effectiveness. Maintenance and review of medical records and test results aid in assessing the effectiveness of the health and safety program. At a minimum, the Corporate Health and Safety Officer should perform the following record keeping activities annually:

- Ensure that each accident or illness was promptly investigated to determine the cause and make necessary changes in health and safety procedures;
- Evaluate specific medical testing to determine potential site exposures;
- Add or delete medical tests as suggested by current industrial hygiene and environmental data;
- Review potential exposures and the HASP at all sites to determine whether additional testing is required; and
- Review emergency treatment procedures and update lists of emergency contacts.
- Assure timely access upon employee request.

FURTHER GUIDANCE: For more information on developing a medical surveillance program, see:

1. *NIOSH Pocket Guide to Chemical Hazards* (NIOSH, 1991, Publication 90-117).
2. *Occupational Medical Monitoring Program Guidelines for SARA Hazardous Waste Field Activity Personnel* (U.S. EPA, 1990, Publication 9285.3-04).
3. *Occupational Safety and Health Guidelines for Chemical Hazards/Supplement II-OHG* (NIOSH, 1989, Publication 89-104).

CHAPTER 8 HEAT STRESS AND COLD EXPOSURE

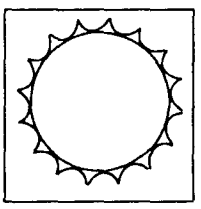


CHAPTER 8 HEAT STRESS AND COLD EXPOSURE

8.0 INTRODUCTION

Temperature extremes pose a hazard of particular concern to the health, safety, and comfort of personnel involved in hazardous waste site activities. Site health and safety personnel must consider the two most common dangers, heat stress and cold exposure, when making decisions regarding PPE selection and work mission duration, when establishing standard operating procedures for site activities, and when conducting medical monitoring.

8.1 HEAT STRESS



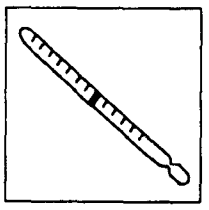
Heat stress is one of the most common and potentially serious illnesses at hazardous waste sites and, therefore, warrants regular monitoring and other preventive measures. Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and the individual characteristics of the worker. Depending on the ambient conditions and the work being performed, heat stress can occur very rapidly -- within as little as 15 minutes -- and can pose as great a danger to worker health as chemical exposure. In its early stages, heat stress can cause rashes, cramps, and drowsiness. This can result in impaired functional ability that threatens the safety of both the individual and co-workers. Continued heat stress can lead to heat stroke and death.

8.1.1 Heat Stress and PPE

Heat stress is a major health hazard for workers wearing PPE because the same protective materials that shield the body from chemical exposure also limit the dissipation of body heat and moisture. Thus, personal protective clothing can create a hazardous condition.

Reduced work tolerance and the increased risk of excessive heat stress is directly influenced by the amount and type of PPE worn. The added weight and bulk of PPE severely reduces the body's access to normal heat exchange mechanisms and increases energy expenditure. When selecting PPE, therefore, each item's benefit should be carefully evaluated in relation to its potential for increasing the risk of heat stress. After PPE has been selected, the safe duration of work/rest periods should be determined based on the anticipated work rate, the ambient temperature and other environmental factors, the type of protective ensemble, and the individual worker characteristics and fitness.

8.1.2 Monitoring for Heat Stress



All workers, even those not wearing protective equipment, should be monitored, because the incidence of heat stress depends on a variety of factors and can affect any worker. Monitoring should be initiated before initial entry and should be continued during each break cycle. Some general guidelines include:

- For workers wearing permeable clothing, monitor for signs of heat stress and follow established work/rest schedules.
- For workers wearing semipermeable or impermeable encapsulating ensembles, workers should also be monitored when the temperature in the work area is above 70°F (21°C). Below 70°F, monitoring is considered on a case-by-case basis.

To conduct personnel monitoring, measure the heart rate and body temperature, as follows:

Heart Rate. Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third.

Oral Temperature. Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking). If

EXHIBIT 8-1
Suggested Frequency of Physiological Monitoring for Fit and Acclimatized Workers[a]

ADJUSTED TEMPERATURE[b]	NORMAL WORK ENSEMBLE[c]	IMPERMEABLE ENSEMBLE
90°F (32.2°) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°- 90°F (30.8°- 32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°- 87.5°F (28.1°- 30.8°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°- 82.5°F (25.3°- 28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 minutes of work	After each 120 minutes of work

[a] For work levels of 250 kilocalories/hour.
[b] Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 X % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
[c] A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

Source: *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985).

oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period. If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following work cycle by one-third. Do not permit a worker to wear a semipermeable or impermeable garment when his/her oral temperature exceeds 100.6°F (38.1°C).

Initially, the length of the work cycle should be governed by the frequency of the required physiological monitoring. The frequency of physiological monitoring depends on the air temperature adjusted for solar radiation and the level of physical work (see **Exhibit 8-1**, above).

8.1.3 Preventing Heat Stress

To protect against heat stress, it is important to choose the appropriate level of protection, to provide careful training for workers and site personnel, and to monitor frequently personnel who wear protective clothing. It is also important to ensure that work and rest periods are scheduled regularly, and that workers frequently replace lost fluids (it is not uncommon for workers to lose as many as 6 to 8 quarts of water in a hot shift).

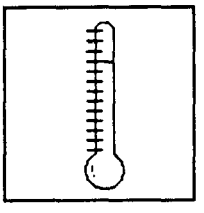
Proper training and preventive measures will help avert serious illness and loss of work productivity caused by heat stress. Preventing heat stress is particularly important because one incident of heat stress will increase the likelihood of future incidences. The site health and safety officer should take the following steps to prevent heat stress:

- Adjust work and rest schedules as needed;
- Provide shelter or shaded areas to protect personnel during rest periods;
- Maintain workers' body fluids at normal levels to ensure that the cardiovascular system functions adequately. Daily fluid intake must equal the approximate amount of water lost in sweat;
- Encourage workers to maintain an optimal level of physical fitness. Fit individuals may acclimatize more readily to temperatures;
- Provide cooling devices to aid natural body heat exchange during prolonged work or severe heat exposure. Effective devices

include field showers or hose-down areas, as well as cooling jackets, vests, or suits;

- Train workers to recognize and treat heat stress, and to identify the signs and symptoms of heat stress (e.g., muscle spasms, dizziness, lack of perspiration). Refer to **Exhibit 8-2** for more detail on the signs and symptoms of heat stress.

8.2 COLD EXPOSURE



Exposure to cold temperatures can cause frostbite and hypothermia as well as impair the ability to work. Extremely low temperatures are not necessary to suffer cold exposure -- a strong wind combined with a cold temperature can chill the body to the point where frostbite and hypothermia are a risk. Maintaining body temperature and recognizing the early signs and symptoms can help prevent illness and injury due to cold exposure.

Cold injury is generally classified as local (e.g., frostbite or frostnip) or general (e.g., hypothermia). The main factors contributing to cold injury are exposure to humidity and high winds, contact with wetness or metal, inadequate clothing, age, and general health. Physical conditions that worsen the effects of cold include allergies, vascular disease, excessive smoking and drinking, and use of specific drugs and medicines.

8.2.1 PPE And Cold Exposure

The correct PPE depends on the specific cold stress situation. It is important to preserve the air space between the body and the outer layer of clothing in order to retain body heat. The more air pockets each layer of clothing has, the better the insulation. However, the insulating effect is negated if the clothing interferes with the evaporation of sweat, or if the skin or clothing is wet.

The most important parts of the body to protect are the feet, hands, head, and face. Hands and feet are the farthest from the heart, and become cooled most easily. Keeping the head covered is important, because as much as 40 percent of body heat can be lost when the head is exposed.

Workers should wear several layers of clothing instead of a single heavy outer garment. In addition to offering better insulation, layers of clothing can be removed as needed to keep the worker from overheating. The outer layer should be windproof as well as waterproof, because body heat is lost quickly in even light winds.

8.2.2 Monitoring for Cold Exposure

Recognizing the early signs and symptoms of cold stress can help prevent serious injury. Described below are the most common types of cold injury and their monitoring signals.

Hypothermia. The first symptoms of hypothermia are uncontrollable shivering and the sensation of cold; the heartbeat slows and sometimes becomes irregular, the pulse weakens, and the blood pressure changes. Severe shaking or rigid muscles may be caused by bursts of body energy and changes in the body's chemistry. Uncontrollable fits of shivering, vague or slow slurred speech, memory lapses, incoherence and drowsiness are some of the symptoms that can occur. Other symptoms that can be seen before complete collapse are cool skin, slow and irregular breathing, low blood pressure, apparent exhaustion, and fatigue after rest.

As the core body temperature drops, the victim may become listless, confused, and make little or no attempt to keep warm. Pain in the extremities can be the first warning of dangerous exposure to cold. Severe shivering must be taken as a sign of danger. If the body core temperature reaches about 85°F, significant and dangerous drops in blood pressure, pulse rate, and respiration can occur. In some cases, the victim may die.

Frostbite. Frostbite can occur without hypothermia when the extremities do not receive sufficient heat from central body stores. This can occur because of inadequate circulation and/or insulation. Frostbite occurs when there is freezing of the fluids around the cells of the body tissues due to extremely low temperatures. Frostbite may result in damage to and loss of tissue, and usually affects the nose, cheeks, ears, fingers, and toes. Damage from frostbite can be serious (e.g., scarring, tissue death resulting in amputation, and permanent loss of movement in the affected parts).

EXHIBIT 8-2
Classification, Medical Aspects, and Prevention of Heat Illness

Category and Clinical Features	Predisposing Factors	Underlying Physiological Disturbance	Treatment	Prevention
Temperature Regulation Heatstroke				
Heatstroke: (1) Hot, dry skin; usually red, mottled, or cyanotic; (2) rectal temperature 40.5°C (104°F) and over; (3) confusion, loss of consciousness, convulsions, rectal temperature continues to rise; fatal if treatment is delayed	(1) Sustained exertion in heat by unacclimatized workers; (2) lack of physical fitness and obesity; (3) recent alcohol intake; (4) dehydration; (5) individual susceptibility; and (6) chronic cardiovascular disease	Failure of the central drive for sweating (cause unknown) leading to loss of evaporative cooling and an uncontrolled accelerating rise in t_{re}; there may be partial rather than complete failure of sweating	Immediate and rapid cooling by immersion in chilled water with massage or by wrapping in wet sheet with vigorous fanning with cool dry air; avoid overcooling; treat shock if present	Medical screening of workers, selection based on health and physical fitness; acclimatization for 5-7 days by graded work and heat exposure; monitoring workers during sustained work in severe heat
Circulatory Hypostasis Heat Syncope				
Fainting while standing erect and immobile in heat	Lack of acclimatization	Pooling of blood in dilated vessels of skin and lower parts of body	Remove to cooler area; rest in recumbent position; recovery prompt and complete	Acclimatization; intermittent activity to assist venous return to heart
Water and/or Salt Depletion				
(a) Heat Exhaustion (1) Fatigue, nausea, headache, giddiness; (2) skin clammy and moist; complexion pale, muddy, or hectic flush; (3) may faint on standing with rapid thready pulse and low blood pressure; (4) oral temperature normal or low, but rectal temperature usually elevated (37.5-38.5°C or 99.5-101.3°F); water restriction type: urine volume small, highly concentrated; salt restriction type: urine less concentrated chlorides less than 3 g/L	(1) Sustained exertion in heat; (2) lack of acclimatization; and (3) failure to replace water lost in sweat	(1) Dehydration from deficiency of water; (2) depletion of circulating blood volume; (3) circulatory strain from competing demands for blood flow to skin and to active muscles	Remove to cooler environment; rest in recumbent position; administer fluids by mouth; keep at rest until urine volume indicates that water balances have been restored	Acclimatize workers using a breaking-in schedule for 5-7 days; supplement dietary salt only during acclimatization; ample drinking water to be available at all times and to be taken frequently during work day
(b) Heat Cramps Painful spasms of muscles used during work (arms, legs, or abdominal); onset during or after work hours	(1) Heavy sweating during hot work; (2) drinking large volumes of water without replacing salt loss	Loss of body salt in sweat, water intake dilutes electrolytes; water enters muscles, causing spasm	Salted liquids by mouth, or more prompt relief by IV infusion	Adequate salt intake with meals; for unacclimatized workers, supplement salt intake at meals.

EXHIBIT 8-2 (continued)
Classification, Medical Aspects, and Prevention of Heat Illness

Category and Clinical Features	Predisposing Factors	Underlying Physiological Disturbance	Treatment	Prevention
Skin Eruptions				
(a) Heat Rash (*miliaria rubra*, or "prickly heat")				
Profuse tiny raised red vesicles (blister-like) on affected areas; pricking sensations during heat exposure	Unrelieved exposure to humid heat with skin continuously wet from unevaporated sweat	Plugging of sweat gland ducts with sweat retention and inflammatory reaction	Mild drying lotions; skin cleanliness to prevent infection	Cool sleeping quarters to allow skin to dry between heat exposures
(b) Anhidrotic Heat Exhaustion (*miliaria profunda*)				
Extensive areas of skin which do not sweat on heat exposure, but present gooseflesh appearance, which subsides with cool environments; associated with incapacitation in heat	Weeks or months of constant exposure to climatic heat with previous history of extensive heat rash and sunburn	Skin trauma (heat rash; sunburn) causes sweat retention deep in skin; reduced evaporative cooling causes heat intolerance	No effective treatment available for anhidrotic areas of skin; recovery of sweating occurs gradually on return to cooler climate	Treat heat rash and avoid further skin trauma by sunburn; provide periodic relief from sustained heat
Behavioral Disorders				
(a) Heat Fatigue - Transient				
Impaired performance of skilled sensorimotor, mental, or vigilance tasks, in heat	Performance decrement greater in unacclimatized and unskilled worker	Discomfort and physiologic strain	Not indicated unless accompanied by other heat illness	Acclimatization and training for work in the heat
(b) Heat Fatigue - Chronic				
Reduced performance capacity; lowering of self-imposed standards of social behavior (e.g., alcoholic over-indulgence); inability to concentrate, etc.	Workers at risk come from temperate climates for long residence in tropical latitudes	Psychosocial stresses probably as important as heat stress; may involve hormonal imbalance but no positive evidence	Medical treatment for serious causes; speedy relief of symptoms on returning home	Orientation on life in hot regions (customs, climate, living conditions, etc.)

The freezing point of the skin is about 30°F (-1°C). As wind velocity increases, heat loss is greater and frostbite will occur more rapidly. If skin comes into contact with objects colder than freezing (e.g., tools or machinery), frostbite may develop at the point of contact, even in warmer environments.

There are three degrees of frostbite: first degree, which is freezing without blistering or peeling; second degree, which is freezing with blistering or peeling; and third degree, which is freezing with tissue death. **Exhibit 8-3** lists the symptoms of frostbite. It is important to remember that the victim is often unaware of the frostbite until someone else observes the symptoms.

EXHIBIT 8-3
Symptoms of Frostbite

- The first symptom of frostbite is an uncomfortable sensation of coldness, followed by numbness. There may be tingling, stinging, aching, or cramping.
- The skin changes color to white or grayish-yellow, then to reddish-violet, and finally turns black as the tissue dies.
- Pain may be felt at first, but subsides.
- Blisters may appear.
- The affected part is cold and numb.
- When frostbite of the outer layer of skin occurs, the skin has a waxy or whitish look and is firm to the touch.
- In cases of deep frostbite, the tissues are cold, pale, and solid. Injury is severe.

8.2.3 Preventing Cold Exposure

In preventing cold stress, health and safety professionals must consider factors relating both to the individual and to the environment. Acclimatization, water and salt replacement, medical screening, continuing medical supervision, proper work clothing, and training and education will contribute to the prevention of cold stress and injury related to working in a cold environment. Control of the environment involves engineering controls, work practices, work-rest schedules, environmental monitoring, and considerations of windchill temperature.

Acclimatization. Some degree of acclimatization may be achieved in cold environments. With sufficient exposure to cold, the body undergoes some changes that increase comfort and reduce the risk of cold injury. However, these physiological changes are usually minor and require repeated uncomfortably cold exposures to induce them. People who are physically unfit, older, obese, taking medication, or using alcohol or drugs may not acclimatize too readily.

Dehydration. Working in cold areas causes significant water losses through the skin and lungs as a result of the dryness of the air. Increased fluid intake is essential to prevent dehydration, which affects the flow of blood to the extremities and increased the risk of cold injury. Warm, sweet, caffeine-free, non-alcoholic drinks and soup should be available at the work-site for fluid replacement and caloric energy.

Salt. The body needs a certain amount of salt and other electrolytes to function properly. However, using salt tablets is not recommended. Salt tablets cause stomach irritation, which may include nausea and vomiting. A normal, balanced diet should take care of salt needs. Anyone with high blood pressure or who is on a restricted sodium diet should consult a physician for advice on salt intake.

Windchill. Air temperature alone is not sufficient to judge the cold hazard of a particular environment, because even a light wind can blow away the thin layer of air that insulates the body against the cold air temperature. The "windchill factor" is the cooling effect of any combination of temperature and air movement. The windchill index (**Exhibit 8-4**) should be consulted to estimate the equivalent temperature felt by personnel working in cold and windy environments. Remember, however, that the windchill index does not take into account: (1) the body part exposed to the cold; (2) the level of activity and the resulting heat produced; or (3) the amount of clothing worn.

Continuous exposure of skin should not be permitted when the windchill factor results in an equivalent temperature of -32°C (-26°F). Workers exposed to air temperatures of 2°C (35.6°F) or lower who become immersed in water or whose

EXHIBIT 8-4
Windchill Index[1]

	ACTUAL THERMOMETER READING (F)									
	50	40	30	20	10	0	-10	-20	-30	-40
Wind speed in mph	EQUIVALENT TEMPERATURE (F)									
calm	50	40	30	20	10	0	-10	-20	-30	-40
5	48	37	27	16	6	-5	-15	-26	-36	-47
10	40	28	16	4	-9	-21	-33	-46	-58	-70
15	36	22	9	-5	-18	-36	-45	-58	-72	-85
20	32	18	4	-10	-25	-39	-53	-67	-82	-96
25	30	16	0	-15	-29	-44	-59	-74	-88	-104
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116
Over 40 mph (little added effect)	Little Danger (for properly clothed person)				Increasing Danger (Danger from freezing of exposed flesh)			Great Danger		

[1]Source: *Fundamentals of Industrial Hygiene, Third Edition.* Plog, B.A., Benjamin, G.S., Kerwin, M.A., National Safety Council, 1988.

clothing gets wet should be given dry clothing and be treated for hypothermia.

Special Considerations. Older workers and workers with circulatory problems need to be extra careful in the cold. Additional insulating clothing and reduced exposure time should be considered for these workers. Obese and chronically ill people need to make a special effort to follow preventive measures. Sufficient sleep and good nutrition are important for maintaining a high level of tolerance to cold. If possible, the most stressful tasks should be performed during the warmer parts of the day. Double shifts and overtime should be avoided. Rest periods should be extended to cope with increases in cold stress.

Workers should immediately go to warm shelter if any of the following symptoms are spotted: the onset of heavy shivering, frostnip, the feeling of excessive fatigue, drowsiness, and/or euphoria. The outer layer of clothing should be removed when entering a heated shelter. If possible, a change of dry work clothing should be provided to prevent workers from returning to work with wet clothing. If this is not feasible, the remaining clothing should be loosened to permit sweat to evaporate.

Alcohol should not be consumed while in the warmer environment. Anyone on medication such as blood pressure control or water pills should consult a physician about possible side effects from cold stress. It is strongly recommended that workers suffering from diseases or taking medication that interferes with normal body temperature regulation, or that reduces tolerance of cold, not be permitted to work in temperatures of -1°C (30°F) or below.

To guard against cold exposure, provide workers with appropriate clothing, have warm shelter available at all times, carefully schedule work and rest periods, and monitor workers' physical conditions. Under no circumstances should a person be given an alcoholic beverage "to keep warm." Alcohol causes the body to release heat more quickly and will therefore increase the risk of cold exposure. Fruits can help warm the body by creating increased energy and metabolism.

8.2.4 A Control Program for Cold Stress

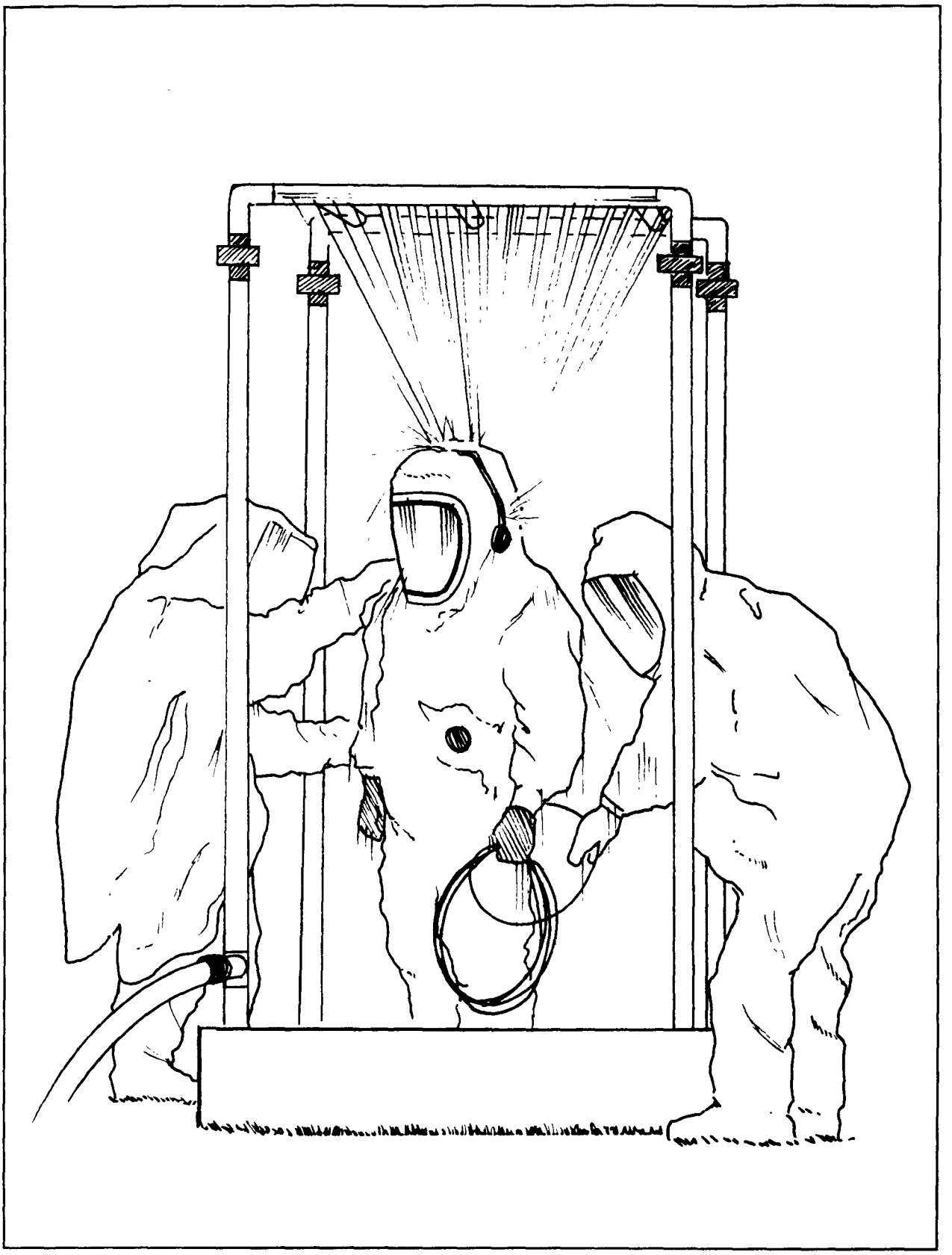
A control program for preventing cold stress at hazardous waste sites should include the following elements:

- **Medical supervision of workers** including pre-placement physicals that evaluate fitness, weight, the cardiovascular system, and other conditions that might make workers susceptible to cold stress. Medical evaluation during and after cold illnesses and a medical release for returning to work should be required.
- **Employee orientation and training** on cold stress, cold-induced illnesses and their symptoms, water and alt replacement, proper clothing, work practices, and emergency first aid procedures.
- **Work-rest regimens**, with heated rest areas and enforced rest breaks.
- **Scheduled drink breaks** for recommended fluids.
- **Environmental monitoring**, using the air temperature and wind speed indices to determine wind chill and adjust work/rest schedules accordingly.
- **Reduction of cold stress** through engineering and administrative controls, and the used of personal protective equipment.

FURTHER GUIDANCE: For additional information on recognizing, preventing, and controlling heat and cold stress, see:

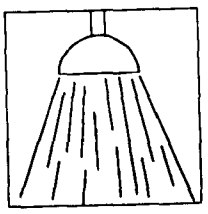
1. Plog, Barbara A., Benjamin, G.S., and M.A. Kerwin. *Fundamentals of Industrial Hygiene, Third Edition.* National Safety Council, 1988.
2. *Pocket Guide to Cold Stress.* National Safety Council, 1985.
3. *Pocket Guide to Heat Stress.* National Safety Council, 1985.
4. *1991-1992 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.* American Conference of Governmental Industrial Hygienists, 1991.

CHAPTER 9 DECONTAMINATION



CHAPTER 9 DECONTAMINATION

9.0 INTRODUCTION



Decontamination, the process of removing or neutralizing contaminants, is critical to health and safety at hazardous waste sites. Decontamination protects workers from hazardous substances that can eventually permeate protective clothing, respiratory equipment, tools, and vehicles. It protects site personnel by minimizing the spread of hazardous substances into clean areas on-site, prevents the mixing of incompatible wastes, and protects the community by preventing the migration of contaminants from the site. Personnel engaged in hazardous waste operations may become contaminated in a number of ways, including:

- Contacting vapors, gases, mists, or particulates in the air;
- Being splashed by materials while sampling or opening containers;
- Walking through puddles of liquids or sitting in contaminated soil; and
- Using contaminated instruments or equipment.

Protective clothing and respirators help prevent the wearer from becoming contaminated or inhaling hazardous substances, and good work practices help minimize contamination on PPE, instruments, and equipment. But even with these safeguards, contamination may occur. To prevent and minimize the severity of such incidences, the HAZWOPER regulations at 29 CFR §1910.120(k) require the development of a decontamination plan prior to site entry; the development of standard operating procedures (SOPs) to minimize contamination; full decontamination of employees and equipment; and the monitoring of decontamination procedures by the Site Health and Safety Officer.

Cross contamination from protective clothing to the wearer, from equipment to personnel, and from one area to another can be minimized by combining decontamination, the correct methods for removing contaminated PPE, and the use of site work zones. This chapter provides an overview of decontamination, provides general guidelines for designing and selecting decontamination procedures at a site, explains equipment for decontamination procedures, and discusses how decontamination and PPE are related.

9.1 THE DECONTAMINATION PLAN

Any site where hazardous waste cleanup operations occur must have a plan that outlines decontamination procedures (29 CFR §1910.120(k)). These procedures must be made available to employees and must be implemented before anyone enters areas on-site where there is suspected contamination. The plan must ensure that chosen decontamination methods are effective for the specific hazardous substances present, and that the methods themselves do not pose any health or safety hazards. The decontamination plan also should address:

- The number and placement of decontamination stations;
- The necessary decontamination equipment and methods;
- SOPs to prevent contamination of clean areas and to minimize worker contact with contaminants during removal of PPE; and
- Methods for disposing of clothing and equipment that may not be completely decontaminated.

9.2 DEVELOPING THE PLAN

The initial decontamination plan should be based on the assumption that all personnel and equipment leaving the Exclusion Zone ("hot zone") will be grossly contaminated. A personnel decontamination system should then be established to wash and rinse (at least once) all protective equipment used in contaminated areas. This should be done in combination with a sequential doffing of protective equipment, starting at the first decontamination station with the most heavily contaminated item and progressing to the last decontamination station with the least contaminated article (see Section 9.3).

An essential part of the plan should address SOPs for site operations, that is, methods to **prevent** the contamination of people and equipment. For example, using remote sampling techniques, not opening containers by hand, bagging monitoring instruments, using drum grapplers, watering down dusty areas, and not walking through areas of obvious contamination would reduce the probability of becoming contaminated and, therefore, would reduce decontamination time.

The initial decontamination plan should be based on a worst-case situation and should assume no information is available about on-site contaminants. The initial decontamination plan can be modified later, eliminating unnecessary stations or otherwise adapting it to site conditions, by considering the following factors:

Type of Contaminant. The extent to which personnel decontamination is required varies depending on the effects the contaminants have on the body. All contaminants do not exhibit the same degree of toxicity (or other hazard). Whenever it is known or suspected that personnel can become contaminated with highly toxic or skin-destructive substances, a full decontamination procedure should be followed. The procedure can be downgraded only if less hazardous materials are present at the site.

Amount of Contamination. The amount of contamination on protective clothing (and other objects or equipment) usually can be determined by visual inspection. If, after a visual inspection, the PPE appears grossly contaminated, a thorough decontamination is highly recommended. Gross material remaining on the protective clothing for any extended period of time may degrade or permeate it. This likelihood increases with higher air concentrations and greater amounts of liquid contamination. Gross contamination also increases the probability of personnel contact. Swipe tests may help determine the type and quantity of surface contaminants.

Type and Level of PPE. The level of protection and specific pieces of clothing worn can be used to determine the preliminary layout and decontamination stations needed for the decontamination line. Each level of protection presents different problems in decontamination and doffing of equipment. For example: decontamination of SCBA harness straps and backpack assembly often is difficult; however, a butyl rubber apron worn over the harness may make decontamination easier. Clothing variations and different levels of protection may require adding or deleting stations to the preliminary decontamination line.

Work Function. The work each person performs determines the potential for contact with hazardous materials. In turn, this should dictate the layout of the decontamination line. For example, observers, photographers, operators of air samplers, or others in the Exclusion Zone who are performing tasks that will not bring them in direct contact with contaminants may not need to have their garments washed and rinsed. Others in the Exclusion Zone with a potential for direct contact with the hazardous material will require more thorough decontamination. Different decontamination lines could be set up for different job functions, or certain stations in a line could be omitted for personnel performing certain tasks.

Location of Contamination. Contamination on the upper areas of protective clothing poses a greater risk to the worker because volatile compounds may generate a hazardous breathing concentration both for the worker and for decontamination personnel. There is also an increased probability of contact with skin when doffing the upper part of clothing.

Establishment of Procedures. Once decontamination procedures have been established, all personnel requiring decontamination must be given precise instructions (and practice, if necessary). Compliance must be checked frequently. The time it takes for decontamination also must be ascertained. Personnel wearing SCBA must leave their work area with sufficient air to walk to the Contamination Reduction Corridor and undergo decontamination.

9.3 THE CONTAMINATION REDUCTION CORRIDOR

Decontamination activities should be confined to a designated area within the Contamination Reduction Zone, known as the

Contamination Reduction Corridor. The Corridor controls access into and out of the Exclusion Zone and confines decontamination activities to a limited area. The size of the Corridor varies depending on the number of stations in the decontamination procedure, overall dimensions of work control zones, and amount of space available at the site. A Corridor of 75 feet by 15 feet is the minimum area for full decontamination. Stations should be separated physically to prevent cross contamination and should be arranged in order of decreasing contamination, preferably in a straight line. For example, outer, more heavily contaminated items (e.g., outer boots and gloves) should be decontaminated and removed first, followed by decontamination and removal of inner, less contaminated items (e.g., jackets and pants). Individual routes through the decontamination line should be developed for workers exposed to different contamination zones containing incompatible wastes. Entry and exit points should be marked clearly, and the entry and exit points into and out of the Exclusion Zone should be separate points. Dressing and redressing stations for entry and exit to the CRZ should also be separate. Personnel who wish to enter clean areas of the decontamination facility, such as locker rooms, should be completely decontaminated.

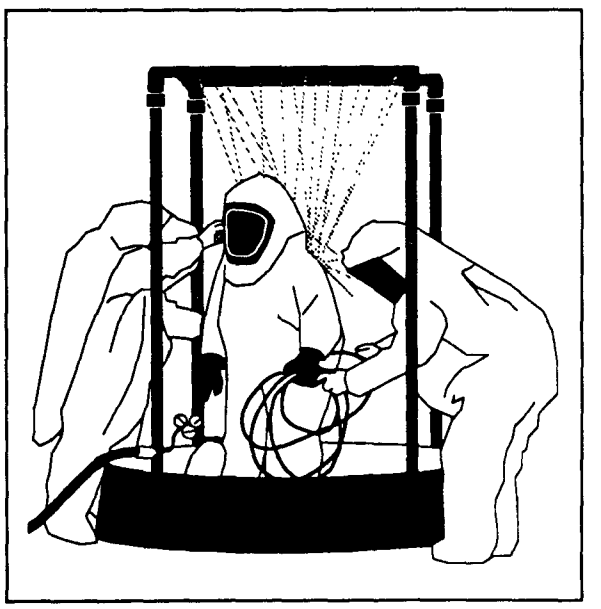
The decontamination Corridor boundaries should be conspicuously marked, with entry and exit restricted. The far end of the Corridor would be the Hotline, the boundary between the Exclusion Zone and the CRZ. Personnel exiting the Exclusion Zone must go through decontamination in the Corridor, and anyone in the Corridor should be wearing the level of protection designated for the decontamination crew. Another Corridor may be required for heavy equipment needing decontamination.

Within the Corridor, distinct areas should be set aside for decontamination of personnel, portable field equipment, removed clothing, etc. These areas should be marked and access should be restricted to personnel wearing the appropriate level of protection. All activities within the Corridor should be confined to decontamination. Personnel protective clothing, respirators, monitoring equipment, and sampling supplies should be stored and maintenanced outside of the Corridor. Personnel should not don their protective equipment in the Corridor.

9.4 DECONTAMINATION PROCEDURES AND EQUIPMENT

All personnel, clothing, equipment, and samples leaving the contaminated area of a site (the Exclusion Zone) must be decontaminated to remove any harmful chemicals or infectious organisms that may have adhered to them. Step-by-step procedures for decontamination of personnel wearing PPE Levels A through C are found in **Appendix E.**

Three general types of decontamination methods are commonly used: (1) physical removal of contaminants; (2) inactivation of contaminants by chemical detoxification or disinfection/ sterilization; or (3) a combination of both physical and chemical means.



9.4.1 Physical Removal of Contaminants

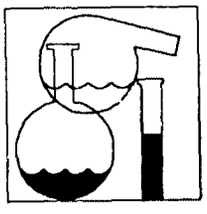
In many cases, contaminants may be removed by physical means; however, high pressure and/or heat should be used only as necessary and with caution because they can spread contamination and cause burns. Some contaminants that can be physically removed are described below.

Loose Contaminants. Soils or dusts that cling to equipment and personnel or that become lodged in PPE materials can be removed with water or a liquid rinse. Commercially available anti-static solutions may help to remove electrostatically attached particles.

Adhering Contaminants. Some contaminants adhere by forces other than electrostatic attraction. Adhesive qualities vary greatly with the specific contaminants and the temperature. For example, contaminants such as glues, cements, resins, and muds have great adhesive properties and, consequently, are difficult to remove by physical means. Adhesive contaminants can be removed using methods such as solidification, freezing (e.g., using dry ice or ice water), adsorption or absorption (e.g., with powdered lime or kitty litter), or melting.

Volatile Liquids. Volatile liquid contaminants can be removed from protective clothing or equipment by evaporation (using steam jets) followed by a water rinse. This method should be used with caution because of the potential for employees to inhale the vaporized hazardous chemicals.

9.4.2 Chemical Removal of Contaminants



Physical removal of gross contamination should be followed by washing and rinsing with cleaning solutions. These solutions normally use one or more of the following methods:

Dissolving Contaminants. Chemical removal of surface contaminants can be accomplished by dissolving them in a solvent that must be chemically compatible with the equipment being cleaned. This is particularly important when decontaminating personal protective clothing constructed of organic materials that could be damaged or dissolved by organic solvents. In addition, any flammable or toxic organic solvents must be used and disposed of cautiously. Organic solvents include alcohols, ethers, ketones, aromatics, straight-chain alkanes, and common petroleum products.

Halogenated solvents are toxic and generally are incompatible with most types of PPE. They should be used only for decontamination in extreme cases where other cleaning agents will not remove the contaminant. Because of the potential hazards, decontamination using chemicals should be done only if recommended by an industrial hygienist or other qualified health professional.

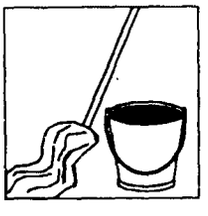
Surfactants. Surfactants supplement physical cleaning methods by minimizing adhesion between contaminants and the surface being cleaned and, therefore, prevent recontamination. Among the most common surfactants are household detergents, some of which can be used with organic solvents to improve the dissolving and dispersal of contaminants into the solvent.

Solidification. Solidifying liquid or gel contaminants can enhance their physical removal. Contaminants may be solidified by: (1) using absorbents such as grounded clay or powdered lime to remove moisture; (2) chemical reactions using polymerization catalysts and chemical reagents; and (3) freezing with ice water.

Rinsing. Rinsing removes contaminants through dilution, physical attraction, and solubilization. Multiple rinses with clean solutions remove more contaminants than a single rinse with the same volume of solution. Continuous rinsing with large volumes is the most effective way to remove contaminants.

Disinfection/Sterilization. Chemical disinfectants are a practical means of inactivating infectious agents. Unfortunately, standard sterilization techniques are generally impractical for large equipment and PPE. For this reason, disposable PPE is recommended for use with infectious agents.

9.4.3 Decontamination Equipment



Decontamination equipment, materials, and supplies are generally selected based on availability. It is also necessary to consider whether the equipment itself can be decontaminated for reuse or can be easily disposed of. Most equipment and supplies needed for decontamination are easily procured (e.g., soft bristle and long handle brushes for scrubbing; buckets or garden sprayers for rinsing; large galvanized wash tubs or stock tanks for solutions; and large plastic garbage cans or other similar lined containers for storing contaminated clothing and equipment). Other decontamination gear includes paper or cloth towels for drying protective clothing and equipment. **Exhibits 9-1** and **9-2** list recommended

equipment for decontaminating personnel and PPE, and heavy equipment and vehicles, respectively.

EXHIBIT 9-1
Recommended Equipment for Decontaminating Personnel and PPE

- Plastic drop cloths for storing heavily contaminated equipment and outer protective clothing.
- Drums or suitably lined trash cans for storing disposable clothing and heavily contaminated PPE that must be discarded, and for storing contaminated solutions.
- Lined boxes with absorbents for rinsing off solid or liquid contaminants.
- Washing and rinsing solutions selected to reduce contamination and the hazards associated with contaminants.
- Large galvanized tubs, stock tanks, or children's wading pools to hold wash and rinse solutions. These should be at least large enough for a worker to place a booted foot in, and should have either no drain or be connected to a collection tank or appropriate treatment system.
- Plastic sheeting, sealed pads with drains, or other appropriate methods for containing and collecting contaminated wash and rinse solutions spilled during decontamination.
- Long-handled, soft-bristled brushes to help wash and rinse off contaminants.
- Paper or cloth towels for drying protective clothing and equipment.
- Lockers and cabinets for storage of decontaminated clothing and equipment.
- Shower facilities for full body wash or, at a minimum, personal wash sinks (with drains connected to a collection tank or appropriate treatment system).

Currently, there are no available methods for immediately determining the effectiveness of decontamination procedures. Discolorations, stains, corrosive effects, and substances adhering to objects may indicate contaminants have not been removed. However, observable effects only indicate surface contamination and not permeation (absorption) into clothing, tools, or equipment. Also, many contaminants are not easily observed.

EXHIBIT 9-2
Recommended Equipment for Decontaminating Large Equipment and Vehicles

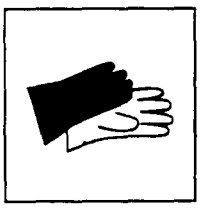
- Tanks for temporary storage and/or treatment of contaminated wash and rinse solutions.
- Drains or pumps for collecting contaminated wash and rinse solutions.
- Long-handled brushes, rods, and shovels for dislodging contaminated soil caught in tires and the undersides of vehicles and equipment and for general exterior cleaning.
- Washing and rinsing solutions selected to remove and reduce the hazards associated with contamination.
- Pressurized sprayers for washing and rinsing, particularly for hard-to-reach areas.
- Curtains, or spray booths to contain splashes from pressurized sprays.
- Containers to hold contaminated soil removed from tires and the undersides of vehicles and equipment.
- Wash and rinse buckets for use in the decontamination of operator areas inside vehicles and equipment
- Brooms and brushes for cleaning the insides of vehicles and equipment.
- Containers for storage and disposal of contaminated wash and rinse solutions, damaged or heavily contaminated parts, and equipment to be discarded.

One method for determining effectiveness of surface decontamination is swipe testing. Cloth or paper patches are wiped over predetermined surfaces of the suspect object and analyzed in a laboratory. Both the inner and outer surfaces of protective clothing should be swipe tested. Positive indications of both sets of swipes would

indicate surface contamination has not been removed and substances have penetrated or permeated through the garment. Determining permeation of contaminants into protective garments requires laboratory analysis of a piece of the material. Both swipe and permeation testing provide after-the-fact information. Along with visual observations, results of these tests can help evaluate the effectiveness of decontamination.

In many cases, depending on what substances are present at a site, chemical protective clothing (or naturally absorbable materials) may have to be discarded. In this case, all small equipment items (brushes, clothing, tools) should be collected, placed in containers, and labeled. Also, all spent solutions and wash water should be collected and disposed of properly. Clothing that is not completely decontaminated should be placed in plastic bags, pending further decontamination and/or disposal.

9.5 PROTECTION OF DECONTAMINATION PERSONNEL



Decontamination workers are vital to the fulfillment of site decontamination procedures. It is their responsibility to monitor and aid the decontamination of personnel, PPE, and equipment. Decontamination workers must wear the appropriate level of protection to accomplish this task without exposing themselves to the contamination. This level of protection can be determined by:

- Expected or visible contamination on workers;
- Type of contaminant and associated respiratory and skin hazards;
- Total vapor/gas concentrations in the contamination reduction corridor;
- Particulates and specific inorganic or organic vapors in the Corridor; and
- Results of swipe tests.

Decontamination workers who initially come in contact with personnel and equipment leaving the Exclusion Zone will require more protection from contaminants than decontamination workers who are assigned to the last station in the decontamination line. In some cases, decontamination personnel should wear the same levels of PPE as workers in the Exclusion Zone. In other cases, decontamination personnel may be sufficiently protected by wearing protection of one level lower (e.g., wearing Level C protection while decontaminating workers who are wearing Level B). Level D is not acceptable in the CRZ for decontamination line personnel. All decontamination workers are in a contaminated area and must themselves be decontaminated before entering the clean Support Zone.

All decontamination personnel should be trained in the standard operating procedures for minimizing contact and maximizing worker protection, and these procedures should be enforced throughout site operations. In addition, standard operating procedures should be established that maximize worker protection. For example, proper procedures for dressing prior to entering the Exclusion Zone will minimize the potential for contaminants to bypass the protective clothing and escape decontamination. In general, all fasteners should be used; gloves and boots should be tucked under the sleeves and legs of outer clothing; hoods (if not attached) should be worn outside the collar; all junctures should be taped to prevent contaminants from running inside the gloves, boots, jackets, and suits.

9.6 HEALTH AND SAFETY HAZARDS

While decontamination is performed to protect health and safety, it can pose hazards under certain circumstances. Decontamination methods may:

- Be incompatible with the hazardous substances being removed (i.e., a decontamination method may react with contaminants to produce an explosion, heat, or toxic products).
- Be incompatible with the clothing or equipment being decontaminated (e.g., some organic solvents can permeate PPE).

- Pose a direct health hazard to workers (e.g., vapors from chemical decontamination solutions may be hazardous if inhaled).

The chemical and physical compatibility of the decontamination solutions or other decontamination materials must be determined before they are used. Any decontamination method that permeates, degrades, damages, or otherwise impairs the safe functioning of the PPE should not be used. Measures must be taken to adequately protect all workers and equipment from any decontamination method that does pose a direct health hazard.

Hazardous waste facilities should also have in place emergency decontamination procedures, in order to prevent the loss of life or severe injury to site personnel. In the case of threat to life, decontamination should be delayed until the victim is stabilized; however, decontamination should always be performed first, when practical, if it can be done without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life. During an emergency, provisions must also be made for protecting medical personnel and disposing of contaminated clothing and equipment.

FURTHER GUIDANCE: For more information on decontamination procedures and equipment, see:

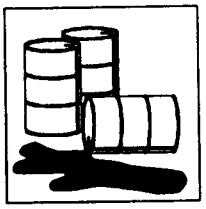
1. *Standard Operating Guidelines for Decontamination of Response Personnel* (U.S. EPA, draft, Publication 9285.2-02A).

2. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985, NIOSH Publication 85-115).

CHAPTER 10 DRUM HANDLING

CHAPTER 10 DRUM HANDLING

10.0 INTRODUCTION



Accidents may occur during handling of drums and other hazardous waste containers. Hazards include detonations, fires, explosions, vapor generation, and physical injury. The most significant ways to improve the safety of drum handling activities at a site are to keep the operation as remote from workers as possible, to avoid sudden releases of chemicals if the operation cannot be remote, and to provide adequate safety gear and equipment to protect the worker if spillage or contact with the drums is unavoidable. **Exhibit 10-1** outlines some basic safety precautions in drum handling.

Regulations defining practices and procedures for safe handling of drums and other hazardous waste containers include:

- OSHA regulations (29 CFR Part 1910. 120(j) and Part 1926) -- general requirements and standards for storing, containing, and handling chemicals and containers, and for maintaining equipment used for handling materials;
- EPA regulations (40 CFR Parts 264 and 265) -- requirements for types of hazardous waste containers, maintenance of containers and containment structures, and design and maintenance of storage areas; and
- DOT regulations (49 CFR Parts 171 through 178) -- requirements for containers and procedures for shipment of hazardous wastes.

During hazardous waste operations, containers are handled during inspection, drum opening, sampling, and characterization. This chapter provides guidance for safely performing these procedures when handling drums and other containers.

10.1 INSPECTION

Appropriate procedures for handling drums varies depending on the drum contents. Prior to handling, drums should be inspected visually to identify their contents. Information that may be helpful includes:

- Symbols, words, or other marks on the drum indicating that its contents are hazardous;
- Symbols, words, or other marks indicating that the drum contains discarded laboratory chemicals, reagents, or other potentially dangerous materials in small-volume individual containers;
- Signs of deterioration such as corrosion, rust, and leaks;
- Signs that the drum is under pressure; and
- Configuration of the drumhead. For example, if the whole lid of the drum can be removed, then it was designed to contain solid material; if the lid has a bung, then the drum was intended for liquids. If the drumhead contains a liner, the drum may likely contain highly corrosive or otherwise hazardous materials.

Noting the type of drum also may be useful for identifying potential hazards. **Polyethylene** or **PVC-lined** drums often contain strong acids or bases. If the lining is punctured, the substance usually quickly corrodes the steel, and may cause a significant leak or spill. **Exotic metal** drums (e.g., aluminum, nickel, stainless steel) are very strong and expensive, and are often used to store extremely dangerous materials. **Single-walled drums used as a pressure vessel** have fittings for both the storage product and for an inert gas. These drums may contain reactive, flammable, or explosive substances.

Laboratory packs are used for disposal of expired chemicals and process samples from university laboratories, hospitals, and similar institutions. Individual containers within the lab pack often are not packed in absorbent material. They may contain incompatible materials, radioisotopes, or shock-sensitive, highly volatile, highly corrosive, or highly toxic exotic chemicals. Laboratory packs are a potential ignition source for fires at hazardous waste sites.

EXHIBIT 10-1
Safety Precautions for Drum Handling

ACTIVITY: LOCATING DRUMS AND CONDUCTING INVENTORY	
POTENTIAL SAFETY HAZARD: Unknown location and contents of drums can lead to unsuspected hazards	
Safety Tips	• Carefully review background data pertaining to the location and types of wastes on-site. • Conduct soil and ground-water sampling only after the geophysical survey is completed to minimize the possibility of puncturing drums. • During the random sampling of drums, which may be required for an inventory, spacing between drums should be adequate to allow for emergency evacuation if needed. • Use remotely operated, nonsparking tools for random sampling whenever possible. • Use direct-reading air monitoring equipment to detect hot spots where contamination may pose a risk to worker safety.

ACTIVITY: DETERMINING DRUM INTEGRITY	
POTENTIAL SAFETY HAZARD: The process of visual inspections requires close contact with drums of unknown content	
Safety Tips	• Approach drums cautiously. Conduct air monitoring to indicate levels of hazards that require withdrawal from the work area or use of additional safety equipment. • Any drum that is critically swollen should not be approached; it should be isolated using a barricade until the pressure can be relieved remotely. • Use of the grappler or other remotely operated equipment can eliminate the need for determining drum integrity prior to excavation, provided that rupture of the drum will not result in fire or unacceptable environmental impact.

ACTIVITY: DRUM EXCAVATION AND HANDLING	
POTENTIAL SAFETY HAZARD: Exposure to toxic/hazardous vapors; rupture of drums	
Safety Tips	• Where buried drums are suspected, conduct a geophysical survey before using any construction equipment in order to minimize the possibility of rupture. • Use a drum grappler where possible and cost-effective to minimize contact with drums. If a grappler is not available, pump or overpack drums of poor integrity before excavation. • Ground equipment prior to transferring wastes to new drums. • Use nonsparking hand tools and nonsparking bucket teeth on excavation equipment, and use plexiglass shields on vehicle cabs. • Where slings, yokes, or other accessories must be used, workers should back away from the work area after attaching the accessory and before the drum is lifted. • Critically swollen drums should not be handled until pressure can be relieved. • Use bars that fit over the teeth of excavation buckets to prevent drum puncture. • Where ionizing levels of radiation are detected, the Site Health and Safety Officer should be contacted; generally, the drum should be overpacked and isolated promptly. • Where explosive or shock-sensitive material is suspected, every effort should be made to handle the drum remotely. Gas cylinders should not be dragged during handling. • Use direct-reading air monitoring equipment when in close proximity to drums to detect any hot spots.

EXHIBIT 10-1 (cont'd)
Safety Precautions for Drum Handling

ACTIVITY: DRUM STAGING AND OPENING	
POTENTIAL SAFETY HAZARD: Release of toxic, hazardous vapors, rupture of drums	
Safety Tips	· Stage gas cylinders in a cool, shaded area. · Stage potentially explosive or shock-sensitive wastes in a diked, fenced area. · Use remote drum opening methods where drums are unsound. · Conduct remote-operated drum opening from behind a barricade or behind a plexiglas shield if backhoe-mounted puncture is being used. · Isolate drum opening from staging and other activities if possible to prevent a chain reaction if an explosion or reaction does occur. · If drum opening cannot be isolated from staging, drums should be staged so as to: (1) minimize the possibility of chain reactions in the event of a fire or explosion; and (2) provide adequate space for emergency evacuation. · Use only nonsparking hand tools if drums are to be opened manually. · Remotely relieve the pressure of critically swollen drums before opening. · Clean up spills promptly to minimize mixing of incompatible materials.

ACTIVITY: CONSOLIDATION AND RECONTAINERIZATION	
POTENTIAL SAFETY HAZARD: Mixing of incompatible wastes	
Safety Tips	· Perform on-site compatibility testing on all drums. · Segregate wastes according to compatibility class following compatibility testing. · Clean up spills promptly to avoid mixing of incompatible wastes. · Intentional mixing of incompatible wastes such as acids and bases should be performed under controlled conditions in a reaction tank where temperature and vapor release can be monitored. · Monitor for incompatible reactions during consolidation using direct-reading air monitoring equipment.

ACTIVITY: INTERIM STORAGE AND TRANSPORTATION	
POTENTIAL SAFETY HAZARD: Mixing of incompatible wastes	
Safety Tips	· Segregate incompatible wastes using dikes during interim storage. · Maintain a weekly inspection schedule. · Allow adequate aisle space between drums to allow rapid exit of workers in case of emergency. · Keep explosives and gas cylinders in a cool, shaded, or roofed area. · Prevent contact of water reactive wastes with water. · Clean up spills or leaks promptly. · Have fire fighting equipment readily available within the storage area. · Ensure adherence to DOT regulations regarding transport of incompatible wastes and drum integrity.

Source: *Drum Handling Practices at Hazardous Waste Sites* (U.S. EPA, 1986, EPA/500/2-86/013).

Conditions in the immediate vicinity of the drums may provide information about drum contents and associated hazards. In addition, air monitoring should be conducted around the drums. If buried drums are suspected, ground-penetrating systems can be used to estimate the location and depth of the drums.

After visual inspection, drums can be classified into preliminary hazard categories. They can be described as radioactive, leaking or deteriorated, bulging, and explosive or shock-sensitive. Until their contents are characterized, unlabelled drums should be handled in the same manner as drums that contain hazardous materials. It is also important to remember that drums are frequently mislabelled -- particularly drums that are reused. Therefore, a drum's label may not accurately describe its contents.

Results of the drum inspection can be used to determine: (1) whether any hazards are present and the appropriate response; and (2) which drums need to be moved before they are opened and sampled. A plan should be developed specifying the extent of handling necessary and the appropriate procedures for handling. Plans should be revised as new information is obtained during drum handling.

10.2 DRUM EXCAVATION AND REMOVAL EQUIPMENT

Drum excavation and removal equipment is used to perform several distinct and important functions, including:

- Excavating to the depth of buried drums and removing surface cover over buried drums.
- Excavating around buried drums to free them for removal.
- Removing (lifting) drums from exposed pits and trenches.
- Loading and transporting drums to onsite storage areas.
- Sampling, segregating, bulking, storing, and recontainerizing (e.g., overpacking) drums.
- Transporting offsite for appropriate storage, treatment, or disposal.

The choice of equipment for drum handling is based on the inherent capabilities and limitations of the equipment, site-specific conditions that affect equipment performance, the necessity to protect worker safety, and costs. Generally, a combination of equipment and accessories is required for a particular job.

10.3 DRUM HANDLING

The purpose of drum handling is to: (1) respond to obvious problems that might impair worker safety; (2) unstack and orient drums for sampling; and (3) if necessary, organize drums into different areas on-site to facilitate characterization and remedial action. Handling may or may not be necessary, depending on how the drums are positioned at a site.

To avoid accidents, drums should only be handled when necessary. Prior to handling, all personnel should be warned about the hazards of handling and instructed to minimize handling as much as possible. In all phases of handling, personnel should be alert for new information about potential hazards and should respond to new hazards before continuing with routine handling operations. Empty overpack drums (larger drums in which smaller leaking or damaged drums are placed for storage or shipment) and an adequate volume of absorbent should be kept near areas where minor spills may occur. Where major spills may occur, a containment berm should be constructed prior to handling. If drum contents spill, personnel trained in spill response should isolate and contain the spill.

The following procedures can be used to maximize worker safety during drum handling and movement:

- Train personnel in proper lifting and moving techniques;
- Select vehicles with sufficient rated load capacity to handle anticipated loads, and ensure that vehicles can operate smoothly on available road surfaces;

- Air condition the cabs of vehicles to increase operator efficiency and protect the operator with heavy splash shields;

- Supply operators with appropriate respiratory protective equipment when needed;

- Prepare overpacks before any attempt is made to move drums;

- Before moving anything, determine the appropriate sequence for moving drums and other containers;

- Exercise extreme caution in handling drums that are not intact and tightly sealed; and

- Ensure that operators have a clear view of the roadway when carrying drums. Where necessary, have ground workers available to direct the operator's motion.

Drums containing **radioactive waste** should not be handled until experts in handling radioactive materials have been consulted. If a drum is suspected to contain **explosive** or **shock-sensitive waste**, specialized assistance should be sought before handling is initiated. If handling is necessary, extreme caution should be used and all non-essential personnel should remain a safe distance from the handling area. In addition, continuous communication with the Site Health and Safety Officer and/or the command post should be maintained until handling operations are complete.

Drums that may be under internal pressure can be identified by **bulging or swelling**. If a pressurized drum must be moved, whenever possible, the drum should be handled with a grappler unit constructed for explosive containment. Either move the bulged drum only as far as necessary to allow seating on firm ground, or carefully overpack the drum. Exercise extreme caution when working with or adjacent to potentially pressurized drums.

Laboratory packs (lab packs) should be considered to hold explosive or shock-sensitive wastes until otherwise characterized. Prior to handling or transporting lab packs, all non-essential personnel should move a safe distance from the handling area. If handling is required, continuous communication with the Site Health and Safety Officer and/or the command post should be maintained until handling operations are complete. Once a lab pack has been opened, it should be inspected and classified according to the hazards of the wastes to ensure safe segregation of the lab packs' contents.

If a **drum containing a liquid** cannot be moved without rupture, its contents should be immediately transferred to a sound drum. **Leaking drums** that contain sludges or semi-solids, open drums that contain liquid or solid waste, and deteriorated drums that can be moved without rupture should be placed in overpack containers.

Prior to initiating **subsurface** excavation, ground-penetrating systems should be used to confirm the location and depth of drums. Soil should be removed with caution to minimize the potential for drum rupture. In addition, a dry chemical fire extinguisher should be available to control small fires.

10.4 DRUM OPENING

Drums are usually opened and sampled in place during site investigations. However, remedial and emergency operations may require a separate drum opening area. Procedures for opening drums are the same, regardless of where the drums are opened. To maximize worker safety during drum opening, the following procedures should be instituted:

- If a supplied-air respiratory protection system is used, place a bank of air cylinders outside the work area and supply air to the operators via airlines and escape SCBAs;

- Keep personnel at a safe distance from the drums being opened; place explosion-resistant plastic shields between personnel and the drums for protection in case of detonation; locate controls for drum opening equipment, monitoring equipment, and fire suppression equipment behind the explosion-resistant plastic shield;

- Conduct air monitoring during drum-opening activities;

- Use non-sparking bronze-beryllium tools when possible;

- Use remote-controlled devices for opening drums, when feasible;
- Hang or balance the drum opening equipment to minimize worker exertion;
- If the drum shows signs of swelling or bulging, perform all steps slowly and relieve excess pressure prior to opening;
- Open exotic metal drums and polyethylene or polyvinyl chloride-lined drums through the bung by removal or drilling;
- Do not open or sample individual containers within laboratory packs;
- Reseal open bungs and drill openings as soon as possible; and
- Decontaminate equipment after each use to avoid mixing incompatible wastes.

Exhibit 10-2 provides a summary assessment of several drum opening techniques, **Exhibit 10-3** presents a sample drum characterization sheet, and **Exhibit 10-4** illustrates two common examples of drum opening equipment.

10.5 DRUM SAMPLING

Drum sampling can be hazardous to worker health and safety because it can involve direct contact with unidentified wastes. Prior to collecting samples, a sampling plan should be developed, including: (1) research about the waste; (2) identification of drums to be sampled; (3) selection of appropriate sampling device(s) and container(s); (4) determination of the number, volume, and locations of samples to be taken; and (5) development of procedures for opening drums, sampling, and sample packaging and transportation. A trained health and safety professional should determine the appropriate personal protection to be used during sampling, decontamination, and packaging of the sample.

To maximize worker safety during manual sampling from a drum, the following techniques should be used:

- Keep sampling personnel at a safe distance while drums are being opened and sample only after opening operations are complete;
- Do not lean over other drums to reach the drum being sampled, unless absolutely necessary;
- Cover drum tops with plastic sheeting or other suitable uncontaminated materials;
- Never stand on drums -- use mobile steps or another platform to achieve the height necessary to safely sample from the drums; and
- Obtain samples with glass rods or vacuum pumps.

10.6 CHARACTERIZATION

The goal of characterization is to obtain data necessary to determine how to safely and efficiently package and transport the wastes for treatment and/or disposal. If wastes are bulked, they must be sufficiently characterized to determine which of them can be safely combined. Standard compatibility tests are simple, rapid, and cost-effective procedures used to segregate wastes into broad categories, including water reactive, oxidative, and radioactive. By identifying broad waste categories, compatible waste types can be safely bulked on-site without the risk of fore or explosion, and disposal options can be determined without exhaustive and costly analysis of each drum. In some cases, however, further analysis may be necessary to identify the waste materials more precisely.

During the compatibility testing process, each drum is scanned for radioactivity as it is opened. If the scan is negative, a sample is taken to perform the compatibility test. (Solid samples should be taken from several different areas within the drum.) In addition, the contents of all drums should be described on the drum data sheet in terms of physical state, viscosity, and number of phases. A sample should be taken for each phase. **Exhibit 10-5** provides a sample HAZCAT checklist for recording screening data.

There are a number of published compatibility testing protocols; however, procedures must be tailored for site-specific conditions. **Exhibit 10-6** presents a thorough protocol developed by the Chemical Manufacturers' Association (CMA). Based on the CMA protocol, wastes can be segregated into the following broad waste categories:

EXHIBIT 10-2
Summary Assessment of Drum Opening Techniques

Technique	Recommended Drum Opening Applications (for Sample Acquisition or Recontainerization)								Restrictions/Disadvantages
	# of Drums to be Opened			Physical Condition of Drums		Waste Content of Drum			
	<100	100-500	>500	Damaged or Bulging	Structurally Sound	Unknown	Shock Sensitive/ Explosive	Non-Hazardous	
Bung Wrenches (Nonsparking)	X				X			X	Not recommended for unknown waste contents; full protective gear for worker.
Manual Drum Deheader	X				X			X	Only if bung is impossible to open; used mainly for recontainerization vs. sample acquisition; unsafe if waste contents are unknown.
Self-Propelled Drum Deheader (Electric or Pneumatic)	X				X			X	May require use of a dekinker or readjustment of the deheader if the chime is dented.
Remotely Operated Pneumatic Wrench	X	X		X	X	X	X		Requires direct contact with the drum during attachment of the wrench. Time-consuming setup.
Remote Hydraulic Plunger									Only in controlled area with spill containment.
• Portable	X			X	X	X	X[1]	X	Most time-consuming hydraulic plunger methods. Requires direct contact with the drum to set up the plunger.
• Self-Propelled (Electric or Pneumatic)	X	X			X	X	X	X	Only suitable if the chime is free of dents.
• Backhoe attached			X	X	X	X	X[1]	X	Use long boom-dipper arms (12 meters or 40 feet).
• Conveyor			X	X	X	X	X[1]	X	Has not been used in the field to date.
Backhoe Spike (Nonsparking)	X	X		X		X	X	X	May damage drum; use long backhoe boom (>40 feet).
Tube and Spear device for venting	X	X	X	X			X		Method applicable for venting of pressure, but not for drum sampling.

[1] Plunger may be of nonsparking bronze or of stainless steel, which is more durable.

Source: *Drum Handling Practices at Hazardous Waste Sites* (U S EPA, 1986, EPA/500/2-86/013).

EXHIBIT 10-3
Sample Drum Characterization Sheet

SITE: _____ **DRUM #:** _____ **SAMPLE #:** _____

Drum Size:

0 unknown ___
1 55 gal. ___
2 30 gal. ___
3 other ___
specify ___

Drum Opening:

0 unknown ___
1 ring top ___
2 closed top ___
3 open top ___
4 other ___
specify ___

Drum Type:

0 unknown ___
1 metal ___
2 plastic ___
3 fiber ___
4 glass ___
5 other ___
specify ___

Drum Color: PRI SEC

0 unknown ___ ___
1 cream ___ ___
2 clear ___ ___
3 black ___ ___
4 white ___ ___
5 red ___ ___
6 green ___ ___
7 blue ___ ___
8 brown ___ ___
9 pink ___ ___
10 orange ___ ___
11 yellow ___ ___
12 gray ___ ___
13 purple ___ ___
14 amber ___ ___
15 green-blue ___ ___

Drum Contents Color:

PRI SEC
0 unknown ___ ___
1 cream ___ ___
2 clear ___ ___
3 black ___ ___
4 white ___ ___
5 red ___ ___
6 green ___ ___
7 blue ___ ___
8 brown ___ ___
9 pink ___ ___
10 orange ___ ___
11 yellow ___ ___
12 gray ___ ___
13 purple ___ ___
14 amber ___ ___
15 green-blue ___ ___

Drum Condition:

0 unknown ___
1 good ___
2 fair ___
3 poor ___

Drum Marking Keywords:

#1 _____
#2 _____
#3 _____

Drum Contents State:

PRI SEC
0 unknown ___ ___
1 solid ___ ___
2 liquid ___ ___
3 sludge ___ ___
4 gas ___ ___
5 trash ___ ___
6 dirt ___ ___
7 gel ___ ___

Drum Content Amount:

0 unknown ___ ___
1 full ___ ___
2 part ___ ___
3 empty ___ ___

Chemical Analysis:

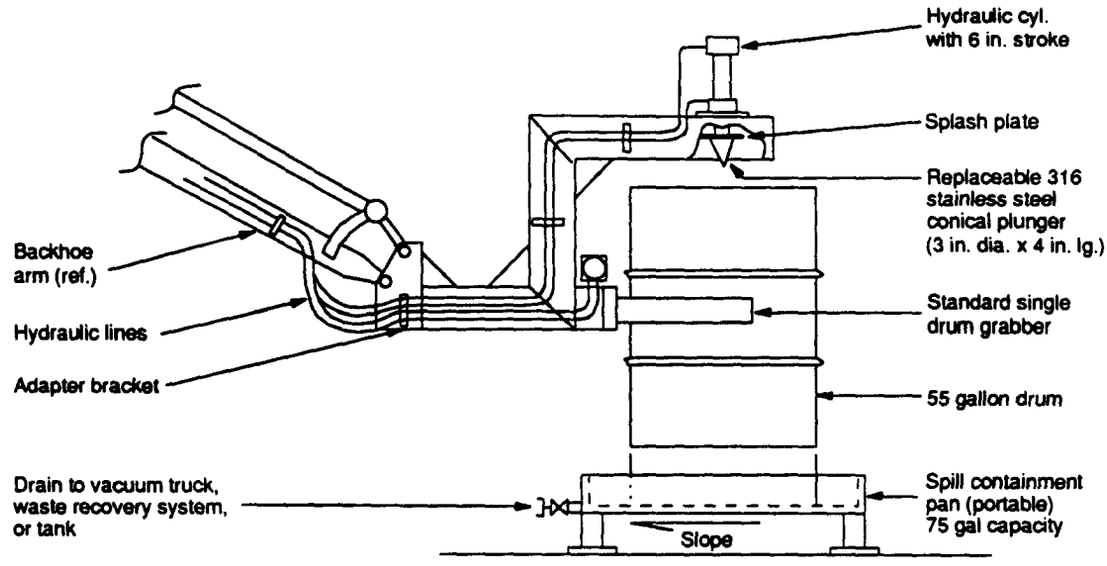
YES NO
radiation ___ ___
ignitable ___ ___
water reactive ___ ___
cyanide ___ ___
oxidizer ___ ___
organic vapor ___ ___ ppm
pH ___ ___

Real-time Instrument Readings

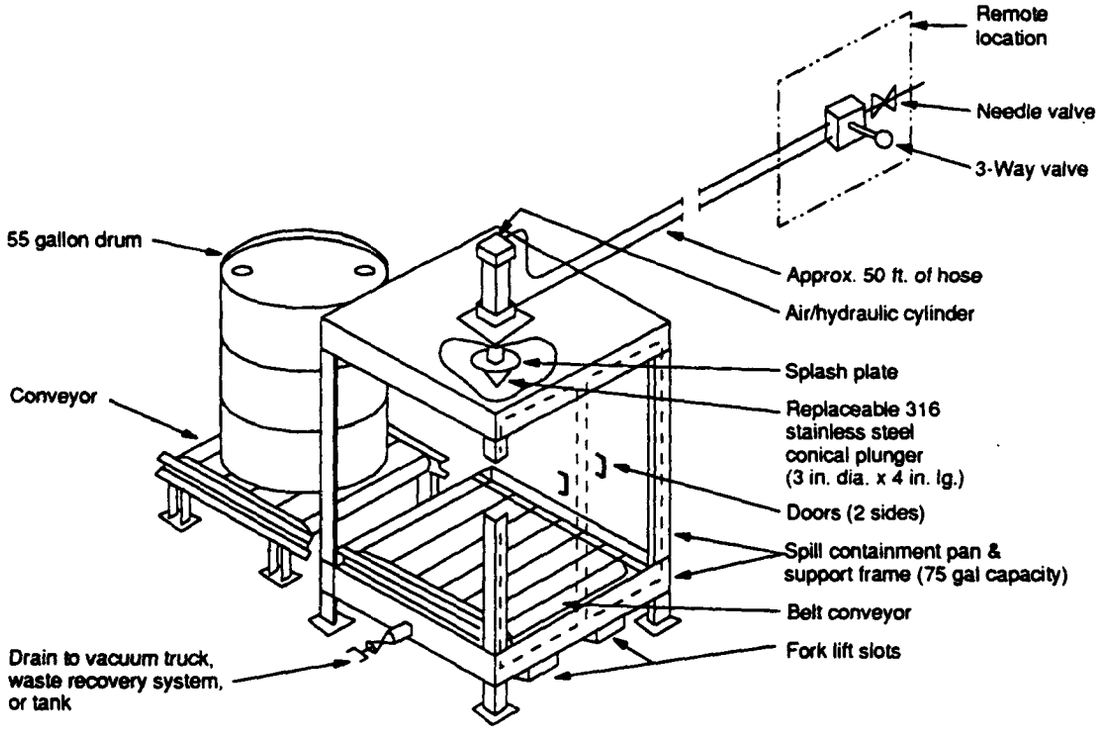
Colorimetric tube _____
Radiation _____
PID _____
FID _____

Source: EPA Region VII Emergency Planning and Response Branch

EXHIBIT 10-4
Examples of Drum Opening Equipment



Hydraulic Backhoe Drum Plunger Arrangement



Conveyor Belt System for Remote Hydraulic Puncturing of Large Number of Drums

EXHIBIT 10-5
HAZCAT Checklist: Characterization Screening Data

Screening Data	YES	NO	Criteria
RADIOACTIVE	☐	☐	≥1 mR over background
ACIDIC	☐	☐	pH ≤ 3
CAUSTIC	☐	☐	pH ≥ 12
AIR REACTIVE	☐	☐	Reaction of ≥ 10°F temp. change
WATER REACTIVE	☐	☐	Reaction of ≥ 10°F temp. change
WATER SOLUBLE	☐	☐	Dissolves in water
WATER BATH OVA	☐	☐	Reading = _____ ≥10 ppm = Yes
COMBUSTIBLE	☐	☐	Catches fire when torched in water bath
HALIDE	☐	☐	Green flame when heated with copper
INORGANIC	☐	☐	WATER BATH OVA and COMBUSTIBLE = No
ORGANIC	☐	☐	INORGANIC = No
ALCOHOL/ALDEHYDE	☐	☐	WATER BATH OVA, WATER SOLUBLE, and COMBUSTIBLE = Yes
CYANIDE	☐	☐	Draeger tube over water bath ≥ 2 ppm
FLAMMABLE	☐	☐	Combustible = Yes, and SETA flashpoint ≤ 140°F
OXIDIZER	☐	☐	Starch iodine paper shows positive reaction
INERT OR OTHER	☐	☐	Everything "No" except INORGANIC or ORGANIC
PCB SCREEN (Chlor-N-Oil)	☐	☐	
	☐		> 50 ppm
	☐		< 50 ppm
	☐		100%

Source: EPA Region VII Emergency Planning and Response Branch. This chart is provided only as an example; values may need to be modified as appropriate.

Liquids: Radioactives, Peroxides and oxidizing agents, Reducing agents, and Water-reactive compounds.

Water Insolubles: Low halogen/low PCB, Mixed halogen/high PCB, and High halogen/low PCB.

Acids: Strong (pH<2), Weak (pH 2-7).

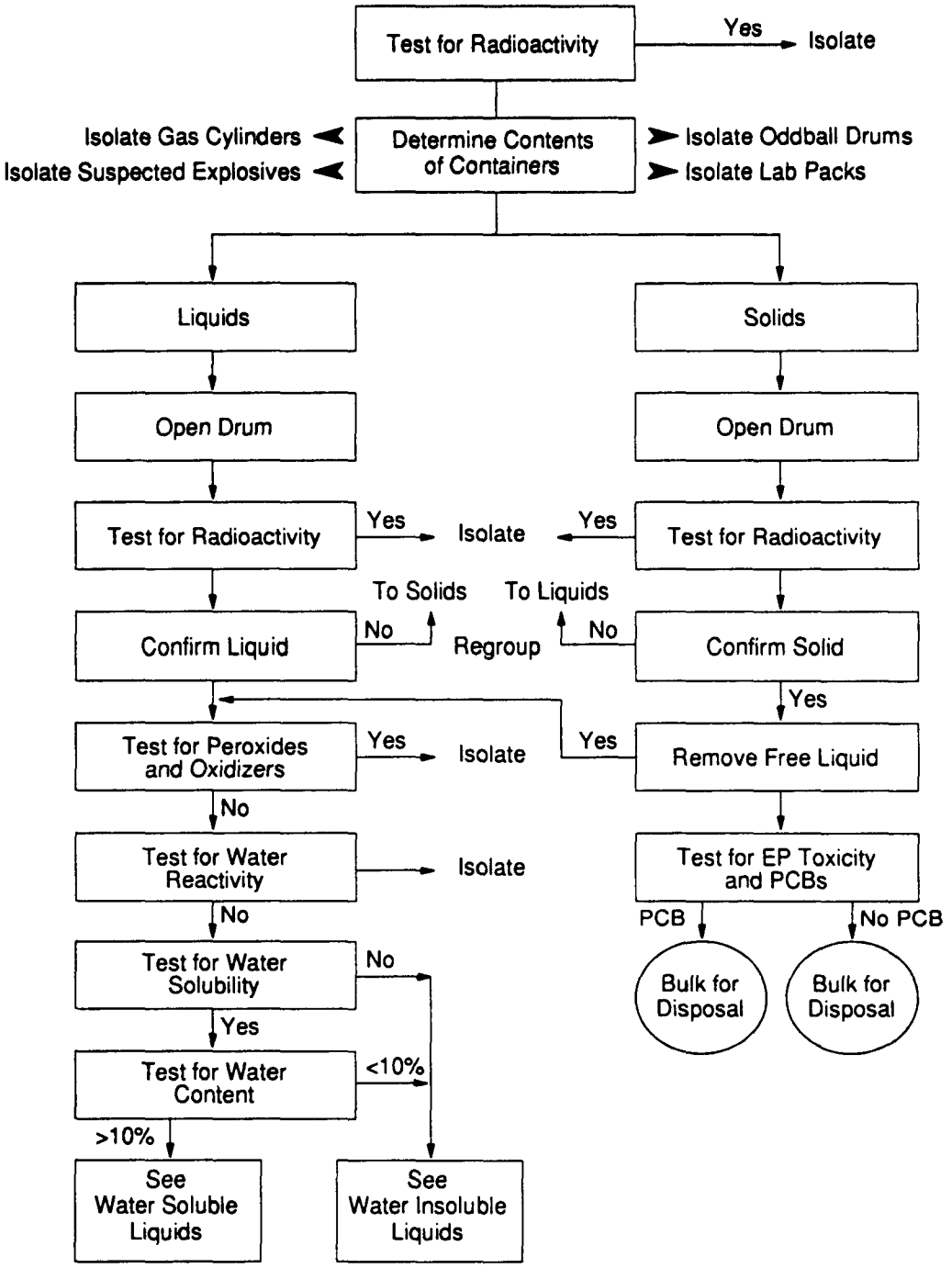
Bases: Strong (pH>12) with or without cyanides or sulfides, and Weak (pH 7-12) with or without cyanides or sulfides.

Solids: Radioactive and Non-radioactive.

This protocol also requires that a compatibility test be performed by mixing small samples of wastes that are intended to be bulked, making visual observations for precipitation, temperature changes, or phase separation.

When possible, materials should be characterized using an on-site laboratory to minimize the time before appropriate action can be taken to handle any hazardous materials. If samples must be analyzed off-site, samples should be packaged on-site in accordance with DOT regulations (49 CFR Parts 171-178) and shipped to the laboratory for analysis.

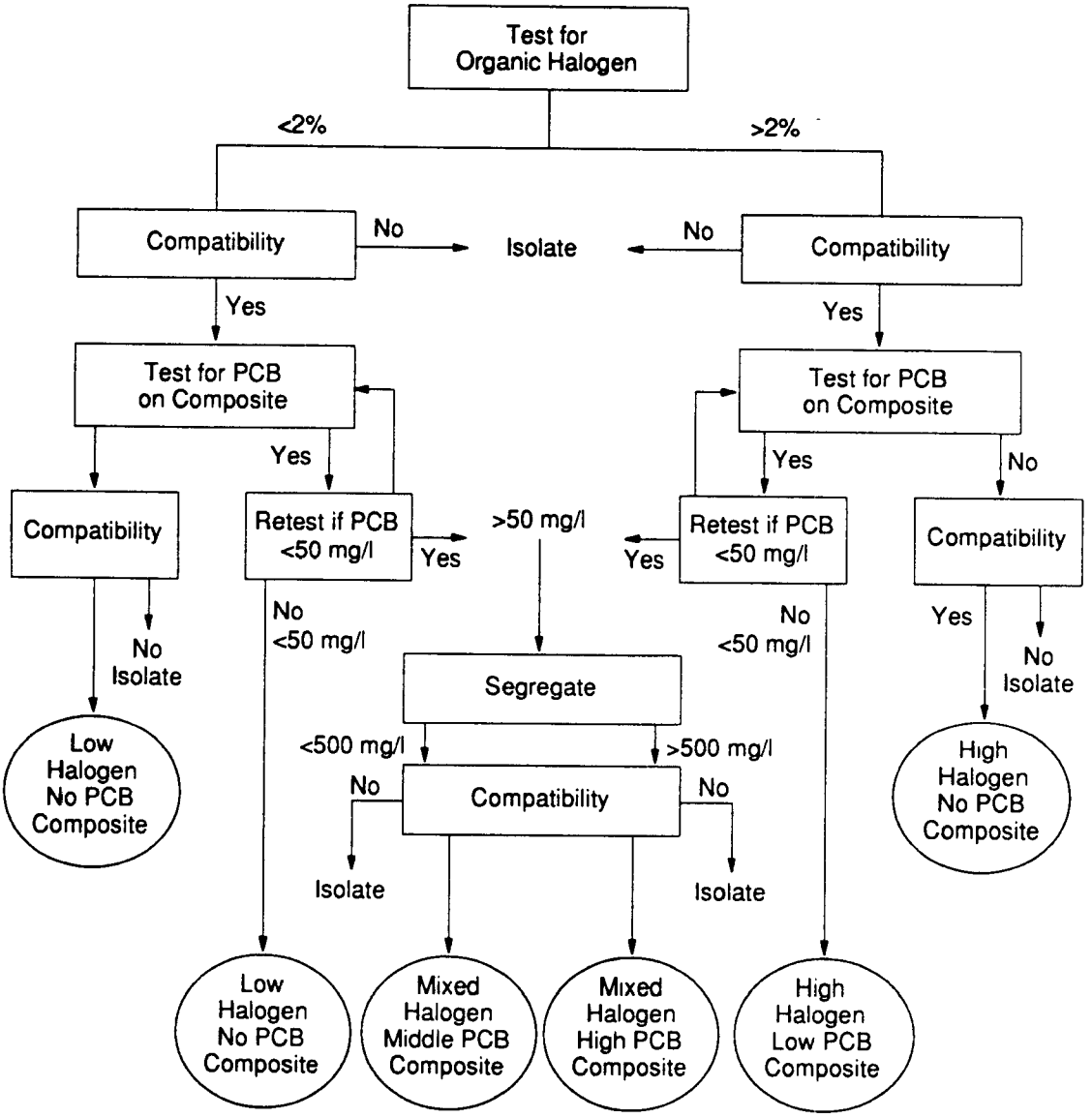
EXHIBIT 10-6
CMA COMPATIBILITY TESTING PROTOCOL



Source: *Drum Handling Practices at Hazardous Waste Sites* (U.S. EPA, 1986, EPA/500/2-86/013).

EXHIBIT 10-6 (cont'd)
CMA COMPATIBILITY TESTING PROTOCOL

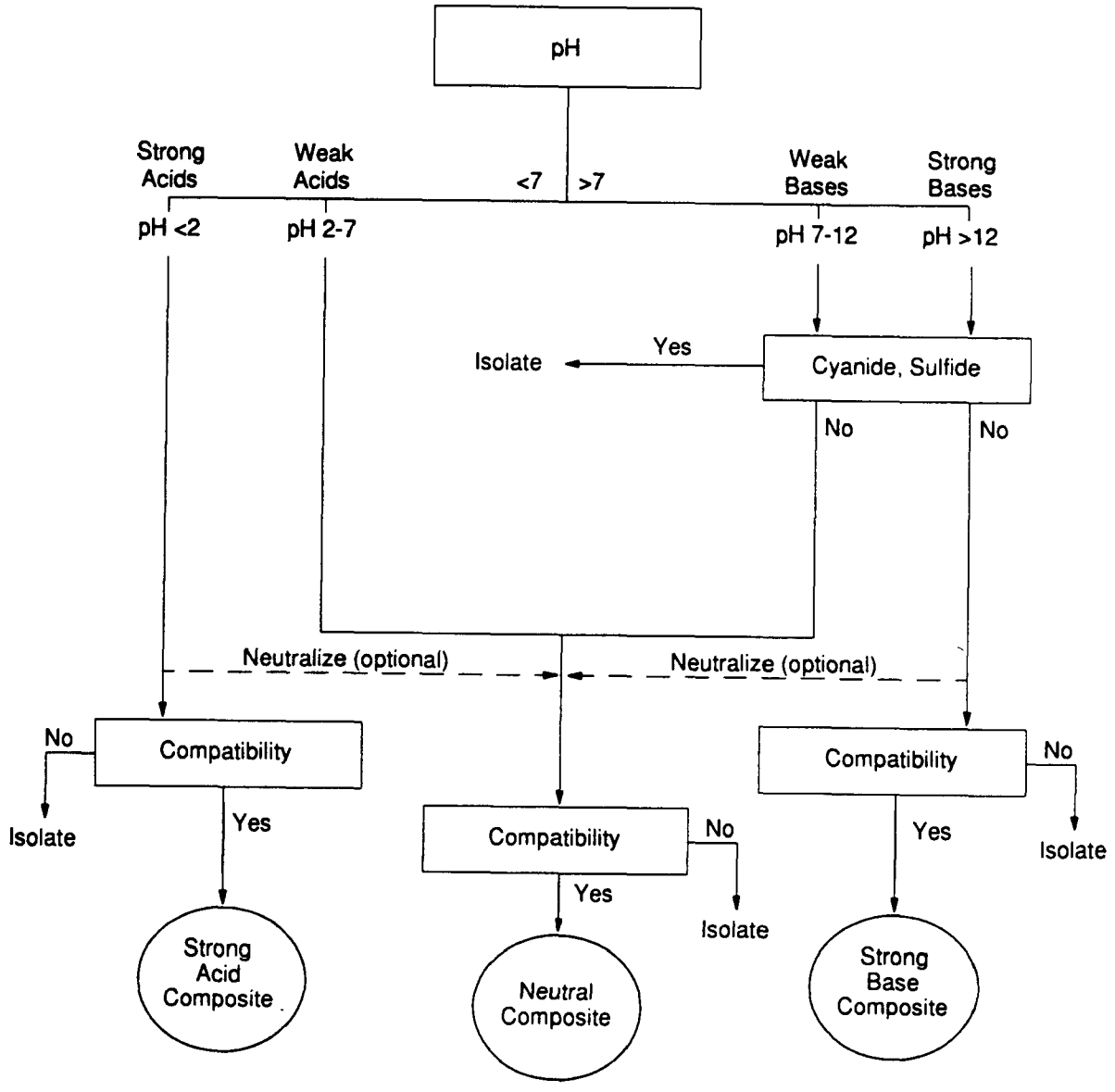
Water Insoluble Liquids Testing



Source: *Drum Handling Practices at Hazardous Waste Sites* (U.S. EPA, 1986, EPA/500/2-86/013).

EXHIBIT 10-6 (cont'd)
CMA COMPATIBILITY TESTING PROTOCOL

Water Soluble Scan



Source: *Drum Handling Practices at Hazardous Waste Sites* (U.S. EPA, 1986, EPA/500/2-86/013).

FURTHER GUIDANCE: For more information on drum handling, see:

1. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.* (NIOSH/OSHA/USCG/EPA, 1985, NIOSH Publication 85-115).

2. *Drum Handling Practices at Hazardous Waste Sites* (U.S. EPA, 1986, EPA 500/2-86/013).

3. *Guidance Document for Cleanup of Surface Tank and Drum Sites* (U.S. EPA, Publication 9380.0-3).

CHAPTER 11 OTHER REQUIREMENTS AND SAFETY CONSIDERATIONS

C24085-2

CHAPTER 11 OTHER REQUIREMENTS AND SAFETY CONSIDERATIONS

11.0 INTRODUCTION

This chapter provides information on three other important HAZWOPER requirements and on specific hazards that employees may face in hazardous waste operations:

- Emergency response and prevention requirements;
- Confined space entry procedures;
- Information and new technology programs;
- Specific hazards, including chemical contamination, explosion and fire, oxygen deficiency, ionizing radiation, biological hazards, and noise and safety hazards.

11.1 EMERGENCY RESPONSE AND PREVENTION

Site emergencies are characterized by their potential for complexity; uncontrolled toxic chemicals may be numerous and unidentified, and their effects may be synergistic. Rescue personnel attempting to remove injured workers may themselves become victims. This variability means that advance planning, including anticipation of different emergency scenarios and thorough preparation for contingencies, is essential to protect worker and community health and safety.

One of the most important components of the HASP is the written site-specific emergency response plan. The emergency response plan should be designed as a separate section of the HASP, and must be compatible and integrated with the disaster, fire, and/or emergency response plans of local, state, and federal agencies. The plan must include a description of how anticipated emergencies would be handled at the site and how the risks associated with a response would be minimized. The emergency response plan must be developed and implemented prior to commencing operations at a site.

The requirements for an emergency response plan at an uncontrolled hazardous waste site are listed in **Exhibit 11-1** and are codified at 29 CFR §1910.120(l)(2). Employers must develop emergency response plans to protect workers in emergencies resulting from the release of all kinds of hazardous substances, including Extremely Hazardous Substances (EHSs), CERCLA hazardous substances, RCRA hazardous wastes, and any substance listed by the U.S. Department of Transportation as a hazardous material.

EXHIBIT 11-1
Required Elements of an Emergency Response Plan at an Uncontrolled Hazardous Waste Site
(29 CFR §1910.120(l)(2))

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Site security and control.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- PPE and emergency equipment.
- Site topography, layout, and prevailing weather conditions.
- Procedures for reporting incidents to local, state, and federal governmental agencies.

In addition to these elements, the emergency response plan must include information relevant for conducting emergency operations at the site,

such as information on site topography, layout, and prevailing weather conditions, and procedures for reporting incidents to local, state, and federal agencies. As part of the overall training program for site operations, the emergency response plan also must be rehearsed regularly and reviewed periodically to ensure that it accounts for new or changing site conditions or new information on potential hazards at the site. The plan must be in writing and available for inspection and copying by employees, their representatives, OSHA personnel, and other government agencies with relevant responsibilities.

An employee alarm system must be installed at all sites in accordance with 29 CFR §1910.165 to notify employees of an emergency situation, to stop work activities if necessary, to lower background noise in order to speed communications, and to begin emergency procedures. Based on the information available at the time of the emergency, the employer should evaluate the incident and the site response capabilities and proceed with the appropriate steps to implement the site emergency response plan.

In lieu of preparing an emergency response plan, site managers may prepare an emergency action plan in accordance with 29 CFR §1910.38(a). This plan may only be developed in lieu of the emergency response plan if employees are evacuated from the site when an emergency occurs, and are not permitted to assist in responding to the emergency. An emergency action plan includes an evacuation plan in which persons responsible for an orderly exit are identified. These designated individuals would direct employees to leave the site and maintain a safe distance, and would also call the appropriate emergency response organization.

If an emergency action plan is prepared, arrangements must be made with the local response community (e.g., fire department or other local response services) for them to respond to emergencies that may occur during site operations. The local response community must be provided with sufficient information regarding site activities, including the types of operations being conducted at the site, the type and degree of contamination at the site, the location of work zones, and any other relevant information that may be necessary for an appropriate response. Such information must be provided prior to the commencement of site operations. Regardless of whether an emergency action plan or an emergency response plan is prepared, local response officials should be notified of site operations prior to the commencement of any site activities. As an additional good operating practice, the site manager may choose to provide local officials with a copy of the plan to review and concur upon.

11.1.1 Prevention

On a day-to-day basis, individual personnel should be constantly alert for indicators of potentially hazardous situations and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency and prevent injuries and loss of life. Regular health and safety meetings with employees should address:

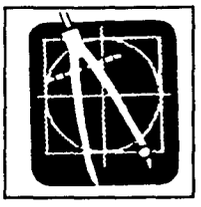
- Tasks to be performed;
- Time constraints (e.g., rest breaks, air tank changes);
- Hazards that may be encountered, including their potential effects, how to recognize symptoms or monitor them, concentration limits, or other danger signals; and
- Emergency procedures.

After daily work assignments, a debriefing session should be held to review work accomplished, problems observed, and suggestions for future improvement.

11.1.2 Communications

In an emergency, crucial messages must be conveyed quickly and accurately. Site staff must be able to communicate information, such as the location of injured personnel, orders to evacuate the site, and information on safe evacuation routes to employees, even through noise and confusion. Outside support sources must be reached and measures for public notification must be ensured, if necessary. To accomplish this, a separate set of internal emergency signals should be developed and rehearsed daily. External communication systems and procedures should be clear and accessible to all workers.

11.1.3 Site Mapping



Detailed information about the site is essential for advance planning. For this purpose, a site map is a valuable tool. It serves as a graphic record of the locations and types of hazards, a reference source, and a method of documentation. The map should focus on potential areas where emergencies may develop, and should be sure to highlight:

- Hazard areas, especially potential IDLH conditions;
- Site terrain: topography, buildings, barriers;
- Evacuation routes;
- Site accessibility by land, sea, and air; and
- Off-site populations or environments at risk.

It is recommended that maps be prepared to scale in a professional manner so that the map can be used as a basis for planning and training, as well as for developing potential emergency scenarios and alternative response strategies. When an emergency occurs, the problem areas should be pinpointed on the map. Pertinent information (e.g., weather and wind conditions, temperature, and forecast) should be added. The map can then be used to design the emergency response plan. When using the map for such purposes, the accuracy of the data obtained and the potential for over- or under-estimating a hazard should be considered. Even if the emergency develops so fast that the map cannot be used for on-the-spot planning, prior familiarity with it will aid in making informed decisions.

11.2 HAZARDS

Although the medical program is essential for assessing and monitoring employee health and fitness before the employee begins activities and during the course of employment, employees should be aware of specific hazards in the workplace.

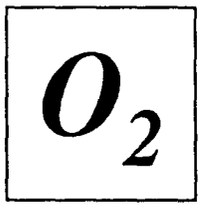
The following sections describe the specific hazards that site personnel face during hazardous waste operations. It is important to remember that no two sites are alike, and that each site may present unique hazards to employees based on the contaminants present, site conditions, site geography and location, and weather.

11.2.1 Explosion and Fire

Explosions and fires at a hazardous waste site may occur for a variety of reasons. Accidentally mixing incompatible chemicals could cause an intense exothermic reaction. A spark or flame could be introduced into an oxygen enriched or flammable atmosphere. The movement or removal of tanks and drums could agitate shock-sensitive compounds or could release materials stored under high pressure.

Explosions and fires may arise spontaneously, although they more commonly result from site activities. In addition to the normal dangers of intense heat, open flame, smoke inhalation, and flying objects, an explosion or fire at a hazardous waste site poses the additional threat of potentially releasing hazardous substances into the atmosphere. Such releases can threaten both personnel on-site and members of the general public living or working nearby. The following precautions should be taken to protect against the hazard: (1) have qualified personnel monitor for explosive atmospheres and flammable vapors; (2) keep all potential ignition sources away from an explosive or flammable environment; (3) use nonsparking, explosion-proof equipment; and (4) follow safe practices when performing any task that might result in the agitation or release of chemicals.

11.2.2 Oxygen Deficiency

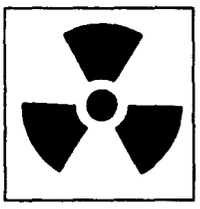


The oxygen content of normal air at sea level is approximately 21 percent. Physiological effects of oxygen deficiency are readily apparent when the oxygen concentration in air decreases to 16 percent. These effects include impaired attention, judgment and coordination, and increased breathing and heart rate. Oxygen concentrations lower than 16 percent can result in nausea and vomiting, brain damage, heart damage, unconsciousness, and death.

For individual physiological responses and errors in measurement, precautions should be taken when the ambient oxygen level is 19.5 percent or lower.

Oxygen deficiency may result from the displacement of oxygen by another gas, or the consumption of oxygen by a chemical reaction. Confined spaces or low-lying areas are particularly vulnerable to oxygen deficiency and should always be monitored prior to entry. Qualified field personnel should always monitor oxygen levels and should use atmosphere-supplying respiratory equipment when oxygen concentrations drop below 19.5 percent.

11.2.3 Ionizing Radiation



Radioactive materials emit one or more of three types of harmful radiation: alpha, beta, and gamma. **Exhibit 11-2** presents the characteristics of these three types of radiation. Alpha radiation has limited penetration ability and is usually stopped by clothing and the outer layers of the skin. Alpha radiation poses little threat outside the body. Beta radiation can cause harmful "beta burns" to the skin and damage the subsurface blood system. Both alpha and beta radiation can be hazardous if radioactive materials emitting alpha or beta radiation are introduced into the body. Use of protective clothing combined with scrupulous personal hygiene and decontamination provides good protection against alpha and beta radiation. Gamma radiation passes easily through clothing and human tissue and can also cause serious permanent damage to the body. Chemical-protective clothing affords no protection against gamma radiation itself; however, use of respiratory and other protective equipment can help keep radioactive materials from entering the body.

If levels of radiation above natural background levels are discovered, a health physicist should be consulted. At levels greater than 2 millirems per hour, all site activities should cease until the site has been assessed by health physicists.

11.2.4 Biological Hazards

Wastes from hospitals and research facilities may contain disease-causing organisms that could infect site personnel. Like chemical hazards, pathogens may be dispersed in the environment via water and wind. Other biologic hazards that may be present include poisonous plants, insects, animals, and

EXHIBIT 11-2
Radiation Characteristics

	Form	Relative Mass	Velocity	Path Length	Number of Ionizations/ cm in Air	Biological Hazard
ALPHA (α)	Particle	4 Atomic Mass Units	1/10 C (C = Speed of Light)	< 1 inch	Hundreds of Thousands	Internal
BETA (β)	Particle	.000001	99% C	1 meter	Hundreds	Internal/ External
GAMMA (γ)	Electro-magnetic Energy	0	C	Several Meters to Kilometers	1	External

indigenous pathogens. Protective clothing and respiratory equipment, and identification of toxic plants, animals, and insects in the area can help reduce the chances of exposure. Thoroughly washing any exposed body parts and equipment will also help protect against infection.

11.2.5 Safety Hazards

Hazardous waste sites may contain a variety of safety hazards, including holes, ditches, precariously positioned or sharp objects, slippery surfaces, steep grades, uneven terrain, and unstable surfaces. In addition to those safety hazards that are a function of the site, many safety hazards are a function of the work itself. Heavy equipment creates an additional hazard for workers in the vicinity of the operating equipment. PPE can impair workers' vision, hearing, or agility. Removal of wastes can create physical hazards at the site that were not present prior to the beginning of operations.

Accidents involving physical hazards can directly injure workers and can create additional hazards such as increased exposure to chemicals due to damaged protective equipment. Site personnel should constantly be aware of potential safety hazards, and should immediately inform a supervisor of any new hazards so that mitigative action can be taken.

One potential hazard that results from a variety of sources is electrocution. Overhead power lines, downed electrical wires, and buried cables all pose a danger of shock or electrocution if workers come into contact with or sever them during site operations. Electrical equipment used on-site may also pose a hazard to workers. Low-voltage equipment with ground-fault interrupters and water tight, corrosion-resistant connecting cables should be used on-site to minimize electrical hazards. Lightning is a hazard during outdoor operations, particularly for workers handling metal containers or equipment. To eliminate this hazard, weather conditions should be monitored and work should be suspended during electrical storms. The OSHA standards at 29 CFR §1910.136 describe proper clothing and equipment for protection against electrical hazards.

11.2.6 Noise Hazards

At many sites, different activities (e.g., drilling operations, heavy equipment operations) may result in appreciable noise levels. It is important that area and personal noise surveys be conducted to categorize noise levels appropriately. A sound level meter that has the capability to integrate and average the sound levels throughout the work day is required to monitor employee exposure to noise levels. **Exhibit 11-3** provides OSHA's Permissible Noise Exposures. These values represent noise levels over which workers may not be exposed without risking adverse hearing effects. These values should be used as guides and should not be regarded as fine lines between safe and dangerous levels.

EXHIBIT 11-3
Permissible Noise Exposures

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

NOTE: When daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C_1/T_1 + C_2/T_2 \ldots C_n/T_n$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level.

Continuous and Intermittent Noise. Currently, the OSHA-Permissible Exposure Limit (PEL) for an 8-hour work day, 40-hour work week is 90 decibels, as recorded on a sound level meter on the A weighted scale (dBA). If the 8-hour time weighted average noise exposures equal or exceed

85 dBA, the site manager must implement a hearing conservation program. If feasible administrative and engineering controls do not reduce sound levels to within acceptable limits, employees should use appropriate PPE to reduce personal exposure.

Impulsive or Impact Noise. Exposure to impulsive or impact noise should not exceed the limits given in **Exhibit 11-4**. No exposures in excess of 140 dB peak sound pressure level are permitted. Impulsive or impact noise is considered to be a variation in noise levels that involves maxima at intervals of greater than one per second. Where the intervals are less than one second, exposure should be considered continuous and should be integrated into the time weighted average.

EXHIBIT 11-4
Threshold Limit Values for Impulsive or Impact Noise

Sound Level dB*	Permitted Number of Impulses or Impacts per Day
140	100
130	1000
120	10,000

* Decibels peak sound pressure level

11.2.7 Work Hazards

The nature of the work done at a hazardous waste site can contribute to the health and safety risks at the site. **Trench excavation** can increase the instability of the site and increase the risk of a "cave in" or collapse. Moving chemical **drums** may injure a worker if the drum ruptures, spilling chemicals in higher quantity than the protective clothing was designed to accommodate. Drums also pose the threat of back injury or a hernia if those workers moving them do not take proper precautions.

Confined spaces, discussed in detail below, often present a major health and safety hazard to workers involved in hazardous waste site operations. In accidents involving confined spaces, a potential rescuer frequently becomes a victim because he or she rushes into the space without taking proper precautions such as a self-contained breathing apparatus. Therefore, it is important that rescuers recognize the atmospheric hazards of a confined space and take proper precautions.

11.3 CONFINED SPACE ENTRY

The proposed Confined Space Standards at 29 CFR §1910.146 may provide the basis upon which to develop a program for entry into confined spaces that pose potential health or safety risks. A confined space is defined as any location that, by design, has limited openings for entry and egress, is not intended for continuous employee occupancy, and is so enclosed that natural ventilation may not reduce air contaminants to levels below the threshold limit value (TLV). Entry into confined spaces without the proper precautions could result in injury and/or impairment due to:

- An atmosphere that is flammable or explosive;
- Lack of oxygen to support life;
- Toxic materials that upon contact or inhalation could cause injury, illness, or death; or
- General safety hazards such as steam, high pressure materials, or other work area hazards that could result in injuries.

Examples of confined spaces include: manholes, stacks, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. It is important to note that even some buildings might be considered a confined space (e.g., an abandoned chemical laboratory with no open doors or windows).

The following elements of confined site entry should be addressed at each site:

- Hazards information and control;
- Employee training and information;
- Prevention of unauthorized entry;
- Equipment;

- Emergency rescue;
- Protection from external hazards;
- Training and duties of authorized entrants, attendants, and individuals authorizing or in charge of entry.

Before entry could be made into a confined space, a confined space entry checklist should be completed and signed. **Exhibit 11-5** provides the proposed Confined Space Entry Permit. To insure that all areas of the confined space are safe for work, the following situations should be evaluated by competent personnel:

Flammable or Explosive Potential. Technically competent personnel trained in testing methods using an explosive gas detector should test the atmosphere within the confined space. If combustible gases are present, entry should not be allowed until the source has been isolated and the space flushed or purged so that the test indicates less than 5 percent of the lower explosive limit.

Oxygen Deficiency. Technically competent personnel should use approved oxygen testing equipment to test the atmosphere within the confined space to determine whether the air is respirable and contains sufficient oxygen to support normal consciousness. If the air is found to be oxygen deficient (less than 17 percent by volume), positive ventilation techniques, including fans and blowers, may be used to increase the oxygen content. If, after further testing, the oxygen concentration is still deficient, SCBA or another proven air supply should be provided and used.

Toxic or Corrosive Materials. When toxic or chemical materials that could result in injury by contact or inhalation by persons entering the confined space are detected or suspected, several actions should be taken by on-site personnel. First, any piping that conveys hazardous materials to the confined space should be isolated. Second, the space should be emptied of the hazardous substance until safe limits are reached. Third, adequate ventilation equipment, as well as all other appropriate protective equipment for protection of the eyes, face, and arms should be provided if the work to be done in the confined space includes welding, burning, or heating, which may generate toxic fumes and gases. Finally, all employees entering a confined space that has contained corrosive materials should wear eye and other appropriate protective equipment to prevent possible contact with any remaining corrosive material.

A hazard evaluation should be conducted before any work in a confined space is started, to identify existing or potential work area hazards that have the potential to cause injuries, illness, or property damage. Examples of work area hazard control items include unguarded openings, high or low temperatures, poor illumination, sharp edges, steam, compressed gases and liquids, flammable or combustible materials, and mechanical or electrical exposures. When dealing with hazards that cannot be eliminated or controlled, adequate PPE should be used.

Prior to entry into a confined space, consideration should be given to how life support systems would function in the event of a power failure. For example, in the event of electrical failure, air supply pumps, lights, warning systems, and other electrically powered devices would be inoperative. Site personnel should have an emergency plan of action that provides alternate life support systems and a means of escape from the confined space. The Site Health and Safety Officer should have communicated this plan to all employees engaged in work in confined spaces.

Each employee entering a confined space should wear a safety belt equipped with a life-line for evacuation purposes in case of an emergency. If the entry is through a top opening, the safety belt should be of the harness type that will suspend a person in an upright position. Emergency equipment such as life-lines, safety harnesses, fire extinguishers, breathing equipment, and other devices appropriate to the situation should be ready and immediately available. All persons engaged in the activity should be trained in the use of the life support system, rescue system, and emergency equipment. In keeping with the buddy system, at least one person, trained in first aid and respiration, should be immediately available outside the confined space to provide assistance if needed, utilizing a planned and immediately available communications means.

EXHIBIT 11-5
OSHA's Proposed Confined Space Entry Permit

☐ CONFINED SPACE ENTRY PERMIT ☐ HAZARDOUS AREA ENTRY PERMIT

1

LOCATION and DESCRIPTION of Confined Space _____ Date _____

PURPOSE of Entry _____ Time _____ M

DEPARTMENT _____ Expiration _____ M

PERSON in Charge of Work _____

2

SUPERVISOR (S) in Charge of Crews	Type of Crew	Phone

3

SPECIAL REQUIREMENTS	Yes	No		Yes	No
Lock Out - De-energize			Escape Harness		
Lines Broken - Capped or Blanked			Tripod emergency escape unit		
Purge - Flush and vent			Lifelines		
Ventilation			Fire Extinguishers		
Secure Area			Lighting		
Breathing Apparatus			Protective Clothing		
Resuscitator - Inhalator			Respirator		

4

TEST(S) TO BE TAKEN (Valid for one 8-hour turn entry)	P.E.L.*	YES	NO	DATE M	DATE M	DATE M	DATE M	DATE M	DATE M	DATE M	DATE M
% of Oxygen	19.5% +21%										
% of L.E.L.*	Any % over 10										
Carbon Monoxide	50 ppm										
Aromatic Hydrocarbon	10 ppm										
Hydrocyanic Acid	10 ppm										
Hydrogen Sulfide	10 ppm										
Sulfur Dioxide	5 ppm										
Ammonia	25 ppm										

Name

GAS TESTER _____

Note: Continuous/periodic tests shall be established before beginning job. Any questions pertaining to test requirements contact certified division gas tester, Plant Gas Coordinator or the Industrial Hygienist

5

INSTRUMENTS USED Name	Type	Ident. No.

SAFETY STANDBY PERSON(S) Name	Ck. No.
Yes ☐	
No ☐	

Supr authorizing all above conditions satisfied _____

AMBULANCE
FIRE

* P.E.L. Permissible Entry Level
* L.E.L. Lower Explosion Level

Orig. to Dept.
Copy to Safety

11.4 INFORMATION AND NEW TECHNOLOGY PROGRAMS

Two additional programs that must be developed, implemented, and included as part of the employer's health and safety program are information and new technology programs (29 CFR §1910.120(i) and (o)). The information program must be developed and implemented to inform employees, contractors, and subcontractors engaged in hazardous waste operations of the nature, level, and degree of exposure that may result from performing hazardous waste operations. In developing this informational program, the employer should consult the Hazard Communications Standard (HCS) (29 CFR §1910.1200 and 29 CFR §1926.59), which may contain information that would be useful to incorporate into the informational program or emergency response plan for a site. Employees, contractors, and subcontractors working outside of the operational part of a site are not covered by this standard.

In addition to developing an informational program, the employer must include as part of the health and safety program procedures for introducing new and innovative technologies into the work area. The purpose of the new technology program is to ensure that new and improved technologies and equipment are developed and introduced to provide for the improved protection of employees engaged in hazardous waste cleanup operations. As part of the new technology program, the employer must carefully evaluate new technologies, equipment, and control measures, such as absorbents and neutralizers, as they are introduced and made available on the market. This evaluation, which must be completed prior to using the new technology on a large scale at the site, must assess the effectiveness of the new equipment, method, or material. Any data or information obtained during the evaluation must be made available to OSHA upon request.

11.5 CONSTRUCTION REQUIREMENTS

In addition to the worker protection standards at 29 CFR §1910.120, OSHA has a number of regulations at 29 CFR Part 1926 that set forth safety and health standards specifically applicable to the construction industry. These standards establish workplace requirements for the following, among others:

- Subpart C: General Health and Safety Provisions;
- Subpart D: Occupational Health and Environmental Controls, for providing adequate illumination and ventilation;
- Subpart F: Fire Protection and Prevention, for storing flammable and combustible liquids;
- Subpart G: Signs, Signals, and Barricades, for posting adequate accident prevention signs and tags;
- Subpart I: Tools -- Hand and Power; and
- Subpart P: Excavations.

Appendix B provides a detailed description of these and other common applicable OSHA standards.

FURTHER GUIDANCE: For more information on emergency response and safety considerations, see:

1. HAZMAT Team Planning Guidance (U.S. EPA, 1990, EPA 540/G-90/003).

2. NIOSH Pocket Guide to Chemical Hazards (NIOSH, 1991, Publication 90-117).

3. Occupational Safety and Health Guidelines for Chemical Hazards/Supplement II-OHG (NIOSH, 1989, Publication 89-104).

4. 1991-1992 Threshold Limit Values for Chemical Substances and Physical Agents, and Biological Exposure Indices. American Conference of Governmental Industrial Hygienists, 1991.

5. Criteria Document -- Working in Confined Spaces (NIOSH, 1980, Publication 80-106).

6. NIOSH Alert: Request for Assistance in Preventing Occupational Fatalities in Confined Spaces (NIOSH, 1986, Publication 86-110).

ACRONYMS

ANSI	American National Standards Institute
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CPC	Chemical Protective Clothing
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
DOT	U.S. Department of Transportation
DRI	Direct Reading Instrument
EHS	Extremely Hazardous Substance
EPA	US Environmental Protection Agency
ERT	US EPA Environmental Response Team
FID	Flame Ionization Detector
FR	Federal Register
GC	Gas Chromatography
HASP	Site-Specific Health and Safety Plan
HAZCOM	Hazard Communication Standard (HCS)
HAZMAT	Hazardous Material
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCS	Hazard Communication Standard (HAZCOM)
IDLH	Immediately Dangerous to Life or Health
IR	Infrared
LEL	Lower Explosive Limit
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NPRM	Notice of Proposed Rulemaking
OSHA	U.S. Occupational Safety and Health Administration
OVA	Organic Vapor Analyzer
PA/SI	Preliminary Assessment and Site Investigation
PCB	Polychlorinated Biphenyls
PE	Preliminary Investigation
PEL	Permissible Exposure Limit
PHC	Principal Hazardous Constituent
PID	Photoionization Detector
PPE	Personal Protective Clothing and Equipment
RCRA	Resource Conservation and Recovery Act
REL	Recommended Exposure Limit
RI/FS	Remedial Investigation and Feasibility Study
SAR	Supplied-Air Respirator
SARA	Superfund Amendments and Reauthorization Act of 1986
SCBA	Self-Contained Breathing Apparatus
SOP	Standard Operating Procedure
SOSG	Standard Operating Safety Guides
TLV	Threshold Limit Value
TSD	Treatment, Storage, and Disposal
TWA	Time-Weighted Average
USCG	U.S. Coast Guard

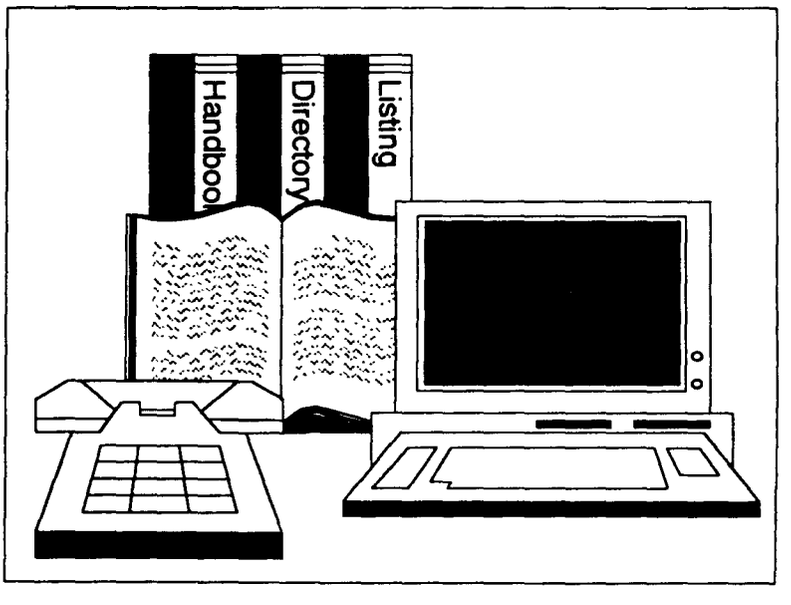
ABBREVIATIONS

cm^3	cubic centimeter
CO_2	carbon dioxide
dBA	decibels on A-weighted scale
ft	foot
g	gram
hr	hour
l	liter
lb	pound
m^3	cubic meter
mg	milligram
ml	milliliter
mrem	milliroentgen equivalent in man
O_2	oxygen
ppb	parts per billion
ppm	parts per million
ta	ambient air temperature
ta adj	adjusted ambient air temperature

APPENDIX A

SOURCES OF INFORMATION AND RESPONSE ASSISTANCE

This Appendix provides a short bibliography of technical manuals and sources of response information. It includes basic chemical and emergency response reference documents, toll-free hotlines and other telephone information sources, and private organizations that offer emergency response assistance and information.



SOURCES OF INFORMATION AND RESPONSE ASSISTANCE

A. INTRODUCTION

Many reference texts and organizations can provide response personnel with technical data and physical assistance regarding both the hazards associated with an incident and methods to deal with them. Because of the variety of activities encountered in hazardous waste field operations, it is necessary to be aware of available resources, to determine their applicability to a project, and to know how to use them.

The information, which may include data on sites, topography, meteorology, physical/chemical properties of the material, applicable treatment methods, and available cleanup resources, can be provided by various agencies, maps, reference books, and manuals. It is advisable to get data from at least two sources and use the latest edition of any reference, especially when searching for hygienic standards or toxicological data.

Access to on-line computer files may be possible at the site if a telephone, portable terminal, and 120-volt outlet are available. Aerial photographs can also provide useful information when properly interpreted.

NOTE: References are not presented in any particular order.

B. BASIC REFERENCES

1. *A Compendium of Superfund Field Operations Methods* (U.S. EPA, 1987, EPA/540/P-87/001).

   The compendium was developed by the U.S. EPA Office of Emergency and Remedial Response primarily to assist the manager as he/she conducts site investigations and assessments. It discusses recordkeeping, site safety, sampling, laboratories, geology, hydrology, quality assurance and a number of other important topics. The information is presented in an easy to understand format, but is not arranged for quick reference (an index is not included).

2. *CHRIS: Chemical Hazard Response Information System* developed by the U.S. Coast Guard. Access through the National Response Center, telephone (800) 424-8802.

   CHRIS consists of four manuals, a regional contingency plan, a Hazard Assessment Computer System (HACS), and an organizational entity at Coast Guard Headquarters. Volume 1 (CG-446-1) is designed to be used by the first responders at an incident. Volumes 2, 3, and 4 (CG-446-2), CG-446-3, and CG-446-4, respectively) are intended for use by the On-Scene Coordinator's (OSC) office along with Regional and National Response Center. Main Coast Guard stations will usually have these manuals.

   a. Volume 1: *Condensed Guide to Chemical Hazards*

      Volume 1 is intended for use by the first responders on the scene of an incident. The chemicals involved must be known, however, before the appropriate information can be obtained from the manual. This volume also contains a list of questions needed to access Volume 3. All information in this volume can be found in Volume 2.

b. Volume 2: *Hazardous Substance Data Manual* (also available from the U.S. Government Printing Office, Washington, DC 20402, GPO stock number 050-012-00147-2)

Volume 2 is probably the most useful in responding to spills/waste sites. It contains information on hazardous chemicals shipped in large volume by water and is intended to be used by port security personnel and others who may be first to arrive at the scene. The easily understood information regarding chemical, physical, and toxicological properties can help quickly determine the actions to be taken immediately to safeguard life, property, and the environment.

c. Volume 3: *Hazard Assessment Handbook*

Volume 3 describes methods of estimating the quantity of chemicals that may be released during an incident, their rate of dispersion, and the methods for predicting any potential toxicity, fire, and explosive hazards.

Volumes 2 and 3 are designed to be used together. The hazard assessment code in Volume 2 for each chemical is used in Volume 3 to select the appropriate procedures for estimating degree of hazard.

d. Volume 4: *Response Methods Handbook*

Volume 4 contains information on existing methods for handling spills of hazardous materials. The appendix lists manufacturers of equipment which may be useful. It also describes methods of spill containment (primarily oil). This volume is intended for use by Coast Guard OSCs with some training or experience in hazard response.

3. *Condensed Chemical Dictionary*, Gessner G. Hawley, Van Nostrand Reinhold Co., 135 W. 50th Street, New York, NY 10020.

This book, a compendium of technical data and descriptive information covering many thousands of chemicals and reactions, is designed for use in industrial situations and can be helpful in assessing a hazardous waste site or spill. However, information pertaining to environmental behavior of chemicals is limited and can be misleading. Three distinct types of information are presented:

a. Technical descriptions of compounds, raw materials, and processes.

b. Expanded definitions of chemical entities, phenomena, and terminology.

c. Description or identification of a wide range of trade-name products used in the chemical industry.

4. *Dangerous Properties of Industrial Materials*, edited by N. Irving Sax, Van Nostrand Reinhold, Co., 135 W. 50th Street, New York, NY 10020.

This book provides a single source of concise information on the hazards of nearly 13,000 common industrial and laboratory materials. Descriptive information and technical data are given in the three sections of the book. The main section "General Information" is designed to expedite retrieval of hazard information. The three sections are:

a. "General Information" -- synonyms, description, formula, physical constants.

b. "Hazard Analysis" -- toxicity, fire hazard, explosive hazard.

c. "Countermeasures" -- handling, storage, shipping, first aid, fire-fighting, personnel protection.

This book is not intended for use on-site. It can be useful later, however, to verify hazards associated with the emergency.

5. *Documentation of the Threshold Limit Values (TLV®)*, ACGIH Publications Office, 6500 Glenway Avenue, Building D-5, Cincinnati, OH 45211.

   This reference includes pertinent scientific information about each substance with references to literature sources used to determine each TLV. Each documentation also describes the type of toxic response for which the limit is used. This book should be consulted for a better understanding of TLVs.

6. *Emergency Response Guidebook*: developed under the supervision of the Office of Hazardous Materials Transportation, Research and Special Programs Administration, U.S. Department of Transportation. The guidebook is available through UNZ&CO, 190 Baldwin Avenue, Jersey City, NJ 07306.

   The guidebook is intended to assist first responders in making informed judgments during the initial phases of a transportation incident involving hazardous materials. It lists the UN/NA numbers designated for hazardous materials, identifies potential hazards associated with the materials and recommends emergency actions to be taken following a spill. It also makes recommendations as to when areas should be evacuated or isolated in the event of a spill.

7. *Handbook of Environmental Data on Organic Chemicals*. Karel Verschueren, published by Van Nostrand Reinhold Company, Inc., 115 Fifth Avenue, New York, NY 10003.

   This handbook provides information to: properties of organic chemicals; air pollution factors; water pollution factors; and biological effects. Where entries are not complete, it may be assumed that no reliable data were provided by the references utilized. The author uses numerous abbreviations which are explained in the first section of the book. Individuals who are not familiar with the abbreviations will find themselves referring to the first section frequently in order to understand listings of specific chemicals.

8. *Hazardous Materials Injuries: A Handbook for Pre-Hospital Care*, Bradford Communications Corp., 7500 Greenway Center Drive, Greenbelt, MD 20770.

   This reference provides information on pre-hospital care. The handbook is set-up similar to the US DOT Guidebook.

9. *The Merck Index*, Merck and Company, Inc., Rahway, NJ 07065.

   The Merck Index is a comprehensive, interdisciplinary encyclopedia of chemicals, drugs, and biological substances. It describes 9,856 chemicals in a structured format. An extensive index and cross-index make the manual easy to use. It is designed to serve a variety of purposes. For response personnel, it provides information on physical/chemical properties of chemicals and their toxicity.

10. National Institute of Occupational Safety and Health/Occupational Safety and Health Administration Resources.

    a. *NIOSH Pocket Guide to Chemicals Hazards*, U.S. Government Printing Office, 1991, Washington, DC 20402.

    Information in this pocket guide comes from the NIOSH/OSHA Occupational Health Guidelines. Presented in a tabular format, it is a reference for industrial hygiene and medical surveillance practices. Included are chemical names and synonyms, permissible exposure limits, chemical and physical properties, signs and symptoms of overexposure, environmental and medical monitoring procedures, recommended respiratory and personal protective equipment, and procedures for treatment.

    b. *NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards*, U.S. Government Printing Office, Washington, DC 20402.

    This three-volume document provides technical data for most of the substances listed in the "NIOSH/OSHA Pocket Guide." The information is much more detailed and is designed primarily for use by industrial hygienists and medical surveillance personnel. In addition to the information found in the "Pocket Guide," "Occupational Health Guidelines" includes recommended medical surveillance practices, air monitoring and measurement procedures, protective equipment, and spill and disposal techniques.

11. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*: developed by NIOSH/OSHA/USCG/EPA, U.S. Government Printing Office, 1985, Washington, DC 20402.

    This manual is a guidance document for managers responsible for occupational safety and health programs at inactive hazardous waste sites. It is intended for federal, state, and local officials and their contractors. It may be used: as a planning tool by government or private individuals; as a management tool by upper level or field managers; as an educational tool to provide a comprehensive overview of all aspects of safety and health protection at hazardous waste sites; or as a reference document for site personnel who need to review important aspects of health and safety.

12. *OHMTADS: Oil and Hazardous Materials Technical Assistance Data System*, developed by the U.S. EPA. Access through U.S. EPA Regional Offices.

    OHMTADS is a computerized data retrieval system available in the form of a computer print-out, manuals, or microfiche. For each of more than 1,000 oil and hazardous substances, there are 126 possible information segments on, for example, toxicity and associated hazards, personnel safety precautions, cleanup and disposal methods, materials handling, and fire fighting. However, not all information is available for all materials.

13. *Registry of Toxic Effects of Chemical Substances*, U.S. Government Printing Office, Washington, DC 20402.

    This annual publication is sponsored by NIOSH and contains toxic dose data with references to source documents and major standards and regulations for 35,000 chemicals.

14. *Farm Chemicals Handbook 1991*, edited by Charlotte Sine, Meister Publishing Company, Willoughby, Ohio, 1991.

    This handbook/dictionary provides information on the properties of common pesticides and herbicides utilized in the farming industry.

C. TOLL-FREE AND OTHER TELEPHONE INFORMATION SOURCES

1. Federal Information Sources

a. Chemical Emergency Preparedness Program (CEPP) Information: Continental US (Toll Free) (800) 535-0202, DC Metropolitan Area (202) 479-2449.

Contact: Chemical Emergency Preparedness Program (CEPP), Office of Solid Waste and Emergency Response (WH-548A), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460. EPA established the toll-free technical assistance hotline in 1985.

b. Coast Guard National Strike Force. Access through the National Response Center, telephone (800) 424-8801.

The National Strike Force (NSF) is a part of the National Response Team established under the authority of the Federal Water Pollution Control Act as amended in 1977.

c. Environmental Response Team (ERT). Telephone (908) 321-6740.

The National Contingency Plan directed EPA to establish the ERT to advise OSCs and Regional Response Teams on environmental issues related to spill containment, cleanup, and damage assessment. The team, established in October 1978, provides expertise in biology, chemistry, and engineering for environmental emergencies, as well as special equipment to control and clean up chemical discharges.

The ERT makes it possible for EPA to provide around-the-clock support to the Regional Offices through personnel whose sole responsibility is to respond to environmental emergencies. The Team is EPA's focal point for technical assistance to the Regions and Program Offices during emergency episodes involving toxic and hazardous wastes. The Team has two locations: Edison, NJ, and Cincinnati, OH. Usually, request for help from the Team comes from each Region's Emergency Coordinator, once the conclusion has been reached that technical assistance is needed. The Team consists of 23 individuals with long experience in dealing with various types of environmental emergencies and in responding to requests for assistance at uncontrolled hazardous waste sites.

The Team is responsible for coordinating the Response, Analytical and Engineering Contract (REAC), a cooperative effort between the Team, the Office of Research and Development's Oil and Hazardous Materials Spill Branch, and contractor personnel. Services available through the Response Unit include prototype spill control equipment such as the mobile physical/chemical treatment system, a mobile flocculation/ sedimentation system, contract laboratory analytical services, and pilot plant treatment studies.

d. Department of Transportation (DOT) Hotline. Telephone (202) 426-2075.

This telephone service was established by the Standards Division of the Materials Transportation Bureau, Office of Hazardous Materials Regulations, to provide informational assistance to those interpreting DOT regulations, as defined in 49 CFR.

e. Hazard Assessment Computer System (HACS). Telephone (800) 424-8802.

HACS, the computerized counterpart of Volume 3 of the CHRIS manuals, makes it possible to obtain very detailed hazard evaluations through the computer at Coast Guard Headquarters. The system is intended primarily for use by the OSC.

2. Private Information Sources

a. Bureau of Explosives. Association of American Railroads (AAR), telephone (202) 835-9500.

This 24-hour emergency number can be used for assistance for hazardous materials incidents involving railroads. This office is often contacted through CHEMTREC.

b. Chemical Referral Center (CRC). Telephone (800) 262-8200, Monday through Friday, 8 a.m. to 9 p.m. EST.

Contact: Chemical Manufacturers Association (CMA), 2501 M Street, NW, Washington, DC 20037. CMA makes this toll-free telephone number available for the general public to use to gain access to non-emergency health and safety information about chemicals.

When the Center receives an inquiry about a chemical, the operator first must determine that the call is not an emergency. Emergencies are immediately routed to CMA's Chemical Transportation Emergency Center (CHEMTREC), which gives emergency personnel detailed information on how to handle the incident (see below). If the inquiry is not on emergency, the operator finds out the name of the company that manufactures the product in question. Working from a computerized index of over 110,000 trade name products, the operator gives the caller the address and phone number of the company person to call. That person will provide the specific health and safety information asked for. For more information about the CRC, contact (202) 887-1318.

c. CHEMTREC. Chemical Manufacturers Association, (800) 424-9300. Alaska, Hawaii, and DC (202) 483-7616.

Contact: Chemical Manufacturers Association, 2501 M Street, NW, Washington, DC 20037. CMA established CHEMTREC to provide immediate assistance to those at the scene of accident, 24 hours a day, seven days a week. CHEMTREC maintains an on-line librarian. Other requests will be referred back to the appropriate states for handling. When the situation requires an immediate response and the manufacturer is unable to respond promptly, CHEMTREC can activate CHEMNET. CHEMNET is an industry-wide mutual aid program established to provide chemical expertise at the scene of a chemical emergency. The program currently includes more than 77 chemical producers, their response teams, and more than 50 private contractor emergency response teams.

CHEMTREC can also provide emergency respondents with a "hard copy" of the information which they have stored on the product during emergencies. The HIT (Hazardous Information Transmission) program requires that response personnel be preregistered and have access to a personal computer, a modem, and a printer. For additional information on the HIT program, contact R. Jay Chezem at the address listed above, or at (202) 887-1255.

d. CHLOREP (Chlorine Emergency Plan). Access through CHEMTREC.

CHLOREP was established by the Chlorine Institute to handle chlorine emergencies in the U.S. and Canada. The system operates through CHEMTREC. Upon receiving an emergency call, CHEMTREC notifies the nearest manufacturer in accordance with a mutual aid plan. This manufacturer then contacts the emergency scene to determine if a technical team should be sent to assist. Each participating manufacturer has trained personnel and equipment available for emergencies.

e. TEAP (Transportation Emergency Assistance Plan). Canadian Chemical Producers Association. Access 24 hours a day through three regional control centers:

-- British Columbia, (604) 929-3341

-- Prairie Provinces, (403) 477-8339

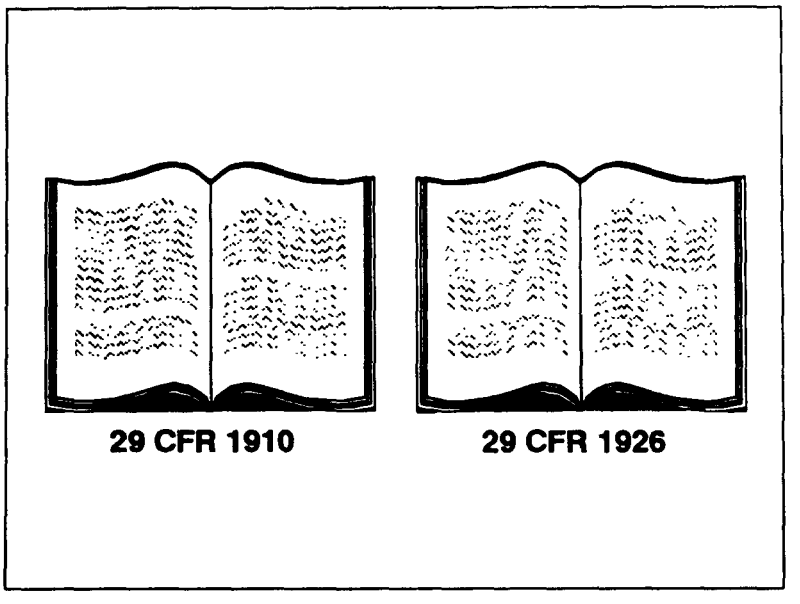
-- Northern Ontario, (705) 682-2881

TEAP functions in Canada in a similar fashion to CHEMTREC in the U.S. It provides emergency advice, gets knowledgeable personnel (usually the manufacturer) in touch with responsible people at the scene of the emergency, and sees that on-the-scene assistance is provided if needed. When the regional control center receives a call, the attendant records basic information, obtains a call-back number, and perhaps gives preliminary information from standard references if the name of the product is known. The attendant then calls one of the center's technical advisors, who calls the scene of the accident to get as much detail as possible and perhaps provides additional advice on coping with the emergency. The advisor then tries to contact the producer. If the producer cannot be reached, or if distances are great, the regional control center contacts a company familiar with the product. The center is also prepared to send personnel and equipment to the scene if necessary. Once contact has been established between producers and local authorities on the scene, the technical advisor assumes a follow-up role and notifies the Canadian Chemical Producers Association of the accident.

APPENDIX B

OTHER COMMON APPLICABLE OSHA STANDARDS

This Appendix presents some common health and safety requirements that are not part of 29 CFR §1910.120 that may need to be addressed prior to initiating hazardous work activities. For sites at which any of these safety requirements are applicable, the information from the regulation should be provided in sufficient detail within the Health and Safety Plan (HASP) to provide adequate protection of employees working on-site. The following are some of the more common OSHA standards that should be considered for site activities, although the list does not reflect all components of the OSHA General Industry (1910) or Construction (1926) standards.



OTHER COMMON APPLICABLE OSHA STANDARDS

OSHA Act, Section 5(a)(1): GENERAL DUTY CLAUSE

Under the "General Duty" clause of the Occupational Safety and Health Act of 1970, section 5(a)(1) states that each employer "shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

29 CFR §1904.2: LOG AND SUMMARY OF OCCUPATIONAL ILLNESSES AND INJURIES

This regulation requires that each employer maintain a log of all recordable occupational injuries and illnesses and that the information be recorded in the log within 6 working days of the receipt of the information. Form OSHA No. 200 or its equivalent is to be used for this purpose.

29 CFR §1910.20: ACCESS TO EMPLOYEE EXPOSURE AND MEDICAL RECORDS

An employer must provide exposure and medical records to an employee or designated representative within 15 days after the request for access to records. If the employee requests copies of this information, the employer must make the copies available to the employee at no cost. All employee medical records must be maintained for the duration of employment plus 30 years by the employer.

29 CFR §1910.24: FIXED INDUSTRIAL STAIRS

This section contains specifications for the safe design and construction of fixed general industrial stairs. This classification includes interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms, or pits.

Requirements include stair strength, stair width, angle of stairway rise, stairway platforms, railings and handrails, and vertical clearance. The requirements regarding stairs are very specific. For instance, 29 CFR §1910.24(h), Railings and Handrails, references 29 CFR §1910.23, which requires two standard rails (one set on each open side) if the stairway is more than four feet in height from ground level.

29 CFR §1910.27: FIXED LADDERS

This regulation includes information on design requirements, specific features, appropriate clearances, special requirements (e.g., use of cages for ladder heights greater than 20 feet), and appropriate pitch when using a fixed ladder.

29 CFR §1910.28: SAFETY REQUIREMENTS FOR SCAFFOLDING

This regulation provides safety requirements for the construction, operation, maintenance, and use of the approximately 20 types of scaffolding.

29 CFR §1910.38: EMPLOYEE EMERGENCY PLANS AND FIRE PREVENTION PLANS

This regulation applies to all emergency action plans and fire prevention plans required by particular OSHA standards. With the exception of employers with 10 or fewer employees, both the emergency action plan and the fire prevention plan are required in writing. The required elements of each of these plans are provided in the regulation. If the employer has 10 or fewer employees, the elements of both types of plans must be provided orally to the employees. The employer shall also perform housekeeping and maintenance of equipment and systems as part of the fire prevention plan.

29 CFR §1910.95: OCCUPATIONAL NOISE EXPOSURE

On many sites, different site activities (e.g., drilling operations, heavy equipment operations) may result in appreciable noise levels. It is important that area and personal noise surveys be conducted to categorize noise levels appropriately. A sound level meter that has the capability to integrate and average sound levels over the course of a work day is required. Currently, the OSHA-Permissible Exposure Limit for an 8-hour work day, 40-hour work week, is 90 decibels as recorded on a sound level meter on the A weighted scale (dBA). An employer shall implement a hearing conservation program if 8-hour time weighted average noise exposures equal or exceed 85 dBA. Continuous intermittent and impulsive sound levels of 80 dBA or greater shall be integrated into the time weighted average.

29 CFR §1910.96: IONIZING RADIATION

This regulation covers employee protection measures related to the possession, use, or transfer of ionizing radiation. The regulations set limitations on employee exposure to ionizing radiation and provide methods for establishing precautionary procedures and personnel monitoring, including surveys of radiation hazards, monitoring equipment, marking of radiation areas, emergency evacuation warning signals, and personnel instruction. The regulations require notification of incidents of releases, overexposure, or excessive levels or concentrations of radiation, and specify that employers must keep records of employee exposure and disclose the information upon request from a former employee.

29 CFR §1910.101: COMPRESSED GASES

To the extent possible, each employer should determine, through a visual inspection, that compressed gas cylinders under his/her control are in safe condition. Other inspections are prescribed in the DOT Hazardous Materials Regulations. Specific safety requirements for handling compressed gases are found in 29 CFR §252(b).

29 CFR §1910.133: EYE AND FACE PROTECTION

Eye and face protection is required when there is the potential for on-site injury. Particular information on goggles, spectacles, and face protection is included in this regulation. Design, construction, testing, and use of such devices must be in accordance with ANSI Z87.1-1968 specifications.

29 CFR §1910.134: RESPIRATORY PROTECTION

Prior to wearing a respirator, an employee should be certified as medically able to wear one. Each employer should have a written respiratory protection plan for selection and use of respirators. All employees must receive training in the proper use of a respirator.

29 CFR §1910.135: OCCUPATIONAL HEAD PROTECTION

On-site situations requiring head protection include: presence of overhead objects, on-site operation of heavy equipment, potential for flying objects in the work area, and possible electric shock hazard. In addition to protecting workers from falling or flying objects, head protection affords limited protection from electric shock and burn. Head protection must meet ANSI Z89.1-1969 specifications.

29 CFR §1910.136: OCCUPATIONAL FOOT PROTECTION

Safety toe footwear for employees must meet ANSI Z41.1-1967 specifications for Men's Safety Toe Footwear. In general, workers at hazardous waste sites must wear leather or rubber boots with steel toes and steel shanks.

29 CFR §1910.141: SANITATION

Specifications concerning appropriate housekeeping, waste disposal, vermin control, water supply, toilet and washing facilities, showers, change rooms, waste disposal containers, sanitary storage, and food handling for permanent places of employment are provided in this regulation.

29 CFR §1910.151: MEDICAL SERVICES AND FIRST AID

If a medical facility is not located in proximity to the workplace, there shall be a person or persons on-site with adequate first-aid training. First-aid supplies approved by a consulting physician shall be available on-site. If there is the potential for corrosive materials on-site, suitable facilities shall be available for drenching of eyes and skin.

29 CFR §1910.165: EMPLOYEE ALARM SYSTEMS

The employee alarm system shall be recognizable to all on-site employees. The signal from the employee alarm system shall be audible to employees in the event of a need to warn employees of an evacuation from work areas.

29 CFR §1910.181: DERRICKS

Derricks attached to drill rigs must be periodically inspected. This regulation defines nine different types of derricks. Specific information is provided on inspection; frequency of inspection; lead ratings; rope use and inspection; fire extinguisher use; operation near power lines; and operating enclosures.

29 CFR §1910.252: WELDING, CUTTING, AND BRAZING

Detailed regulations exist for various types of welding, cutting, and brazing operations. There regulations provide specific information on types of gases, gas pressures, operations and maintenance, and safety procedures.

29 CFR §1910.307: HAZARDOUS LOCATIONS

Electrical equipment used in hazardous locations must be intrinsically safe and suitable for use in the appropriate classified environment. Specified definitions of classifications and further information can be found in §1910.307 and §1910.399.

Subpart Z, 29 CFR §1910.1000: TOXIC AND HAZARDOUS SUBSTANCES

There are other applicable OSHA standards that refer to particular air sampling procedures for chemical contaminants, PPE requirements, and recordkeeping for a variety of compounds. These compounds and their accompanying OSHA regulations are as follows:

Compound	OSHA Reference
Asbestos	29 CFR §1910.1001
Coal tar pitch volatiles	29 CFR §1910.1002
4-nitrobiphenyl	29 CFR §1910.1003
Alpha-naphthylamine	29 CFR §1910.1004
Methyl chloromethyl ether	29 CFR §1910.1006
3,3'-dichlorobenzidine	29 CFR §1910.1007
bis-chloromethyl ether	29 CFR §1910.1008
beta-napthylamine	29 CFR §1910.1009

Benzidine	29 CFR §1910.1010
4-aminodiphenyl	29 CFR §1910.1011
Ehthyleneimine	29 CFR §1910.1012
beta-propiolactone	29 CFR §1910.1013
2-acetylaminofluorene	29 CFR §1910.1014
4-dimethylaminoazobenzene	29 CFR §1910.1015
N-nitrosodimethylamine	29 CFR §1910.1016
Vinyl Chloride	29 CFR §1910.1017
Inorganic arsenic	29 CFR §1910.1018
Lead	29 CFR §1910.1025
Benzene	29 CFR §1910.1028
Coke oven emissions	29 CFR §1910.1029
1,2-dibromo-3-chloropropane	29 CFR §1910.1044
Acrylonitrile	29 CFR §1910.1045
Ethylene oxide	29 CFR §1910.1047
Formaldehyde	29 CFR §1910.1048

29 CFR §1910.1200: HAZARD COMMUNICATION

The employer will establish a hazard communication program to ensure that hazards associated with chemical usage are communicated to employees. The hazard communication program does not apply to hazardous wastes. There are training, labeling, and material safety data sheet (MSDS) requirements for known chemicals. Employers are required to develop a written hazard communication program that will include:

- List of known chemicals on-site;
- Methods for informing employees of chemical hazards associated with non-routine tasks;
- Methods for informing both employees and subcontractors about chemical hazards (e.g., chemical hazard training, distribution of MSDSs).

29 CFR §1926.56: ILLUMINATION

General work areas shall have a minimum illumination intensity of 5 foot-candles. Other specifications for minimum illumination intensities for different work areas and operations are provided in this regulation.

29 CFR §1926.57: VENTILATION

Whenever dust, fumes, mists, vapors, or gases exist or are produced in the course of construction work, their concentrations must not exceed limits specified in 29 CFR §1926.55(a). When ventilation is used, the system must be installed and operated according to the requirements of this section.

29 CFR §1926.59: HAZARD COMMUNICATION

29 CFR §1926.151(a)(3): FIRE PREVENTION

Electrical equipment and wiring for light, heat, or other power purposes must be installed in accordance with the National Electrical Code requirements, NFPA 70-1971; and ANSI CI-197. Also, smoking is prohibited at or in the vicinity of operations which constitute a fire hazard. "No Smoking" or "Open Flame" signs must be posted. In general, smoking should be limited to a designated area within the "support zone" at a hazardous waste site. This will minimize the fire hazard, as well as the transfer of contaminants to smokers' mouths.

29 CFR §1926.152: FLAMMABLE AND COMBUSTIBLE LIQUIDS

Information on appropriate containers and appropriate storage for flammable and combustible liquids is contained in this reference. Note that no more than 25 gallons of liquid may be stored indoors unless located within an approved storage cabinet.

29 CFR §1926.200: ACCIDENT PREVENTION SIGNS AND TAGS

This regulation contains specific information on color, size, shape, and placement of danger, caution, exit, safety instruction, directional, accident prevention, and traffic signs.

29 CFR §1926.301: HAND TOOLS

Special attention should be paid to the use of safe hand tools. For example, wooden tool handles must be kept free of splinters or cracks, and impact tools, such as wedges and chisels, must be kept free of mushroomed heads. Also, wrenches must not be used when jaws are sprung to the point that slippage occurs.

29 CFR §1926.651: SPECIFIC EXCAVATION REQUIREMENTS

Specific information on locating underground utilities; using support systems; securing sides, slopes, and faces; using seals, benches, rock bolts, and wire meshes; taking precautions for work adjacent to previously backfilled areas; diverting water flows from excavated areas; using explosives appropriately; using dust control techniques; and using ladders and ramps is provided in this regulation.

29 CFR §1926.652: TRENCHING REQUIREMENTS

Shoring is needed when the sides of a trench are more than 5 feet deep and unsuitable ground or soft material is present. Also, sides of trenches in hard or compact soil must be shored when the trench is more than 5 feet deep and 8 feet long.

29 CFR Part 1926: Safety and Health Regulations for Construction

29 CFR Part 1926 is divided into twenty-four specific areas addressing safety and health standards for the construction industry, some of which are described in more detail above:

Subpart A	General
Subpart B	General Interpretations
Subpart C	General Safety and Health Provisions
Subpart D	Occupational Health and Environmental Controls
Subpart E	Personal Protective and Life Saving Equipment
Subpart F	Fire Protection and Prevention
Subpart G	Signs, Signals, and Barricades
Subpart H	Materials Handling, Storage, Use, and Disposal
Subpart I	Tools -- Hand and Power
Subpart J	Welding and Cutting
Subpart K	Electrical
Subpart L	Ladders and Scaffolding
Subpart M	Floors and Wall Openings, and Stairways
Subpart N	Cranes, Derricks, Hoists, Elevators, and Conveyors
Subpart O	Motor Vehicles, Mechanized Equipment, and Marine Operations
Subpart P	Excavations
Subpart Q	Concrete and Masonry Construction
Subpart R	Steel Erection
Subpart S	Underground Construction
Subpart T	Demolition
Subpart U	Blasting and Use of Explosives
Subpart V	Power Transmission and Distribution
Subpart W	Rollover Protective Structures; Overhead Protection
Subpart X	Effective Dates

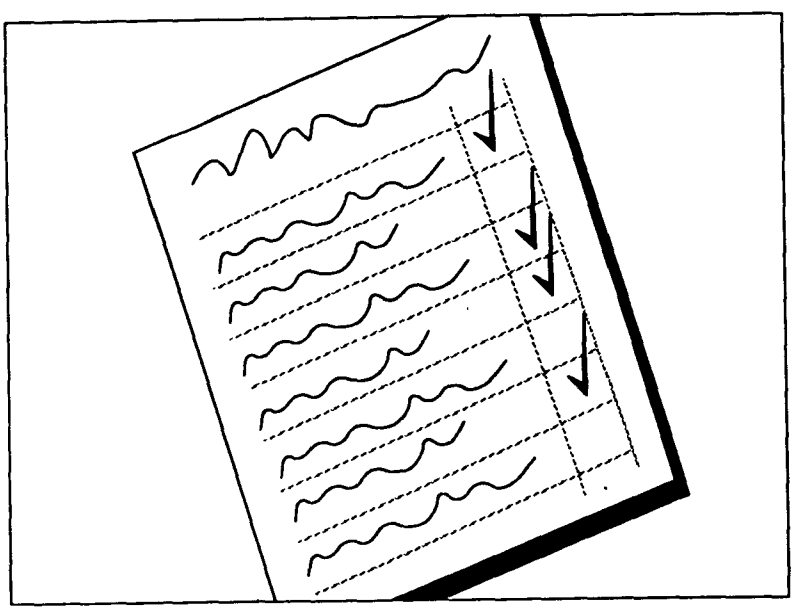
APPENDIX C

INCIDENT SAFETY CHECK OFF LIST

The Incident Safety Check Off List, when completed correctly, fulfills the requirements for performing Preliminary Evaluations under 29 CFR §1910.120. The checklist is divided into two sections.

Section I, which includes the basic preliminary evaluation criteria, must be completed prior to leaving the office for field activities. If the answers provided are not applicable to your particular site, you may write in the appropriate information and any necessary explanations. Section I must be reviewed and signed by a first line supervisor or a health and safety officer before field operations may begin.

Upon returning from the response action, fill out Section II to reflect what actually happened at the site. Section II must also be dated and reviewed by an appropriate supervisor or officer.



Adapted from the *OSWER Integrated Health and Safety Standard Operating Practice for Field Activities* (U.S. EPA, January 1992, Publication 9285.3-02).

INCIDENT SAFETY CHECK OFF LIST

I. BEFORE FIELD ACTIVITY

Employee _____

1. **Incident:** Site _____ City _____ State _____
2. **Activity Description:** Site Evaluation ____ Containment ____ Well Drilling ____ Facility Inspection ____
   Sampling - Air _____ Water _____ Drum _____ Soil _____ Residential _____ Other _____
3. **Type of Response:** Spill _____ Fire _____ Site _____ Train _____ Other _____
4. **Site Topography:** Moutains _____ Rivers _____ Valley _____ Rural _____
   Suburban _____ Level _____ Slopes _____ Unknown ____
5. **Incident Safety Plan:** Region _____ Reviewed _____
   ERT _____ Briefed _____
   Facility _____ Not Developed _____
6. **Site Accessibility:** Road: Good _____ Air: Good _____
   Fair _____ Fair _____
   Poor _____ Poor _____
7. **Suspected chemical(s) and pathway with source(s) involved:** (A) _____
   (B) _____ (C) _____ (D) _____
8. **Emergency Response Teams Present for First Aid, etc.** Yes _____ No _____
9. **Protective Level(s) Selected:** (A) _____ (B) _____ (C) _____ (D) _____
   (a) If Level "C" - 1, Identify Canister _____
   (b) If Level "D", JUSTIFY:
10. **SCBA Identify Buddy System:** Office/Name _____
11. **Last Response:** (a) Level Used: (A) _____ (B) _____ (C) _____ (D) _____
    (b) Medical Attention/Exam Performed: Yes _____ No _____

II. AFTER RESPONSE

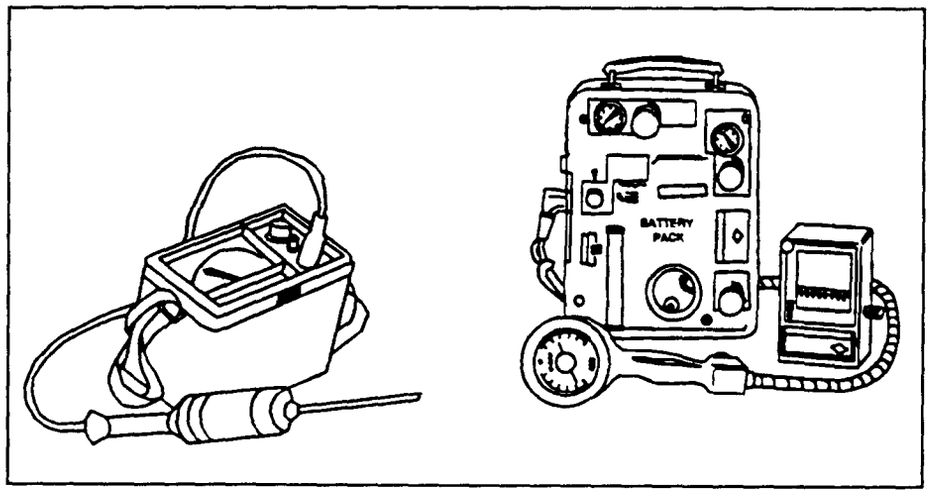
1. **Protective Level Used:** (A) _____ (B) _____ (C) _____ (D) _____
   (a) If Level "C", Identify Canister _____
   (b) If Level "D", JUSTIFY:
   (c) Level B or C skin protection: Tyvek ___ Tyvek/Saran ___ Acid/Rain ___ Other _____
2. **List possible chemical exposure:** Same as above: _____ (A) _____
   (B) _____ (C) _____ (D) _____
3. **Equipment Decontamination:** (a) clothing (b) respirator (c) monitoring
   Disposed: _____ _____ _____
   Cleaned: _____ _____ _____
   No Action: _____ _____ _____
4. **Approximate time in exclusion area:** _____ hours per day for _____ days
5. **Was medical attention/exam required for this response:** Yes _____ No _____

Part I: DATE PREPARED: _____ **Reviewed by:** _____ **Date:** _____

Part II: DATE PREPARED: _____ **Reviewed by:** _____ **Date:** _____

APPENDIX D

CHARACTERISTICS OF THE PHOTOIONIZATION DETECTOR (PID) AND THE FLAME IONIZATION DETECTOR (FID)



CHARACTERISTICS OF THE PHOTOIONIZATION DETECTOR (PID) AND THE FLAME IONIZATION DETECTOR (FID)

I. INTRODUCTION

The HNU® Photoionizer* and the Foxboro® Organic Vapor Analyzer* (OVA) are two of the most widely used hand-held real-time instruments used in the field to detect a variety of compounds in air. The two instruments differ in their modes of operation and in the number and types of compounds they detect (**Table D-1**). Both instruments can be used to detect leaks of volatile substances from drums and tanks, determine the presence of volatile compounds in soil and water, make ambient air surveys, and collect continuous air monitoring data. If personnel are thoroughly trained to operate the instruments and to interpret the data, these instruments can be valuable tools for helping to decide the levels of protection to be worn, assist in determining other safety procedures, and determine subsequent monitoring or sampling locations.

II. ORGANIC VAPOR ANALYZER (OVA)

The OVA operates in two different modes. In the survey mode, it can determine approximate total concentration of all detectable species in air. With the gas chromatograph (GC) option, individual components can be detected and measured independently, with some detection limits as low as a few parts per million (ppm).

In the GC mode, a small sample of ambient air is injected into a chromatographic column and carried through the column by a stream of hydrogen gas. Contaminants with different chemical structures are retained on the column for different lengths of time (known as retention times) and hence are detected separately by the flame ionization detector. A strip chart recorder can be used to record the retention times, which are then compared to the retention times of a standard with known chemical constituents. The sample can either be injected into the column from the air sampling hose or injected directly with a gas-tight syringe.

In the survey mode, the OVA is internally calibrated to methane by the manufacturer. When the instrument is adjusted to manufacturer's instructions it indicates the true concentration of methane in air. In response to all other detectable compounds, however, the instrument reading may be higher or lower than the true concentration. Relative response ratios for substances other than methane are available.

To correctly interpret the readout, it is necessary to either make calibration charts relating the instrument readings to the true concentration or to adjust the instrument so that it reads correctly. This is done by turning the ten-turn gas-select knob, which adjusts the response of the instrument. The knob is normally set at 3.00 when calibrated to methane. Calibration to another gas is done by measuring a known concentration of a gas and adjusting the gas select knob until the instrument reading equals that concentration.

The OVA has an inherent limitation in that it can detect only organic molecules. Also, it should not be used at temperatures lower than about 40 degrees Fahrenheit because gases condense in the pump and column. It has no column temperature control, (although temperature control kits are available) and since retention times vary with ambient temperatures for a given column, determinations of contaminants are difficult. Despite these limitations, the GC mode can often provide tentative information on the identity of contaminants in air without relying on costly, time-consuming laboratory analysis.

III. HNU

The HNU portable photoionizer detects the concentration of organic gases as well as a few inorganic gases. The basis for detection is the ionization of gaseous species. Every molecule has a characteristic ionization potential

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Note: The use of any trade names does not imply their endorsement by the U.S. Environmental Protection Agency.

TABLE D-1

COMPARISON OF THE OVA AND HNU

Action	OVA	HNU
Response	Responds to many organic gases and vapors	Responds to many organics and some inorganic gases and vapors.
Application	In survey mode, measures total concentration of detectable gases and vapors. In GC mode, identifies and measures specific compounds.	In survey mode, measures total concentration of detectable gases and vapors.
Detector	Flame ionization detector (FID)	Photoionization detectors (PID)
Limitations	Does not respond to inorganic gases and vapors. Kit available for temperature control.	Does not respond to methane. Does not detect a compound if probe has a lower energy than compound's ionization potential.
Calibration gas	Methane	Isobutylene
Ease of operation	Requires experience to interpret correctly, especially in GC mode.	Fairly easy to use and interpret.
Detection limits	0.1 ppm (methane)	0.1 ppm (benzene)
Response time	Two - three seconds (survey mode) for CH_4	Three seconds for 90% of total concentration of benzene.
Maintenance	Periodically clean and inspect particle filters, valve rings, and burner chamber. Check calibration and pumping system for leaks. Recharge batteries and refill hydrogen cylinder after each use.	Clean UV lamp frequently. Check calibration regularly. Recharge batteries after each use.
Useful range	0-1000 ppm	0-2000 ppm
Service life	Eight hours; 3 hours with strip chart recorder.	Ten hours; 5 hours with strip chart recorder.

(I.P.) which is the energy required to remove an electron from the molecule, yielding a positively charged ion and the free electron. The incoming gas molecules are subjected to ultraviolet (UV) radiation, which is energetic enough to ionize many gaseous compounds. Each molecule is transformed into charged ion pairs, creating a current between two electrodes.

Three probes, each containing a different UV light source, are available for use with the HNU. Ionizing energies of the probe are 9.5, 10.2, and 11.7 electron volts (eV). All three detect many aromatic and large molecule hydrocarbons. The 10.2 eV and 11.7 eV probes, in addition, detect some smaller organic molecules and some halogenated hydrocarbons. The 10.2 eV probe is the most useful for environmental response work, as the lamp's service life is longer than the 11.7 eV probe and it detects more compounds than the 9.5 eV probe.

Note: The use of any trade names does not imply their endorsement by the U.S. Environmental Protection Agency.

The HNU factory calibration gas is benzene. The span potentiometer (calibration) knob is turned to 9.8 for benzene calibration. A knob setting of zero increases the response to benzene approximately tenfold. As with the OVA, the instrument's response can be adjusted to give more accurate readings for specific gases and eliminate the necessity for calibration charts.

While the primary use of the HNU is as a quantitative instrument, it can also be used to detect certain contaminants, or at least to narrow the range of possibilities. Noting instrument response to a contaminant source with different probes can eliminate some contaminants from consideration. For instance, a compound's ionization potential may be such that the 9.5 eV probe produces no response, but the 10.2 eV and 11.7 eV probes do elicit a response. The HNU does not detect methane or most inorganic compounds.

The HNU is easier to use than the OVA. Its lower detection limit is also in the low ppm range. The response time is rapid; the meter needle reaches 90% of the indicated concentration in 3 seconds for benzene. It can be zeroed in a contaminated atmosphere.

IV. GENERAL CONSIDERATIONS

Both of these instruments can monitor only certain vapors and gases in air. Many nonvolatile liquids, toxic solids, particulates, and other toxic gases and vapors cannot be detected. Because the types of compounds that the HNU and OVA can potentially detect are only a fraction of the chemicals possibly present at an incident, a zero reading on either instrument does not necessarily signify the absence of air contaminants.

The instruments are non-specific, and their response to different compounds is relative to the calibration setting. Instrument readings may be higher or lower than the true concentration. This can be an especially serious problem when monitoring for total contaminant concentrations if several different compounds are being detected at once. In addition, the response of these instruments is not linear over the entire detection range. Care must therefore be taken when interpreting the data. All identifications should be reported as tentative until they can be confirmed by more precise analysis. Concentrations should be reported in terms of the calibration gas and span potentiometer or gas-select-knob setting.

Since the OVA and HNU are small, portable instruments, they cannot be expected to yield results as accurate as laboratory instruments. They were originally designed for specific industrial applications. They are relatively easy to use and interpret when detecting total concentrations of individually known contaminants in air, but interpretation becomes extremely difficult when trying to quantify the components of a mixture. Neither instrument can be used as an indicator for combustible gases or oxygen deficiency.

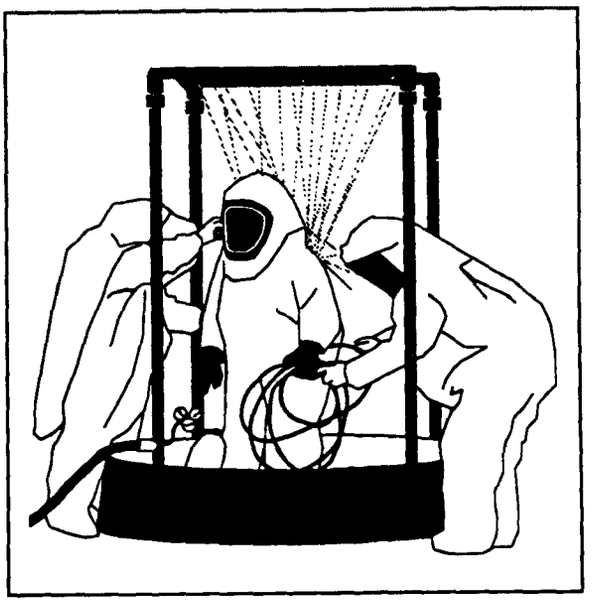
The OVA (Model 128) is certified by Factory Mutual to be used in Class I, Division 1, Groups A,B,C, and D environments. As HNU now markets three models, it should be noted that the basic HNU (PI 101) is certified by SIRA Class I, Division 2, Groups A, B, C, and D. However, a model certified for Class I, Division I, Groups A, B, C, and D is available.

APPENDIX E

SAMPLE DECONTAMINATION LAYOUTS AND PROCEDURES FOR LEVELS OF PROTECTION A THROUGH C

The objective of these procedures is to minimize the risk of exposure to hazardous substances in the field. Protective equipment must be worn by personnel when response activities involve known or suspected hazardous substances. The procedures for decontaminating personnel upon leaving the contaminated area are discussed for personal protective equipment levels A through C. The procedures given are for the maximum and minimum amount of decontamination used for each level of protection.

The maximum decontamination procedures for all levels of protection consist of specific activities at 19 stations. Each station emphasizes an important aspect of decontamination. When establishing a decontamination line, each aspect should be incorporated separately or combined with other aspects into a procedure with fewer steps (such as the minimum decontamination procedures). Decontamination lines are site-specific and vary depending on the types of contamination and work activities conducted on-site. When the decontamination line is no longer required, contamination wash and rinse solutions and contaminated articles must be contained and disposed of as hazardous wastes in compliance with State and Federal regulations.



EQUIPMENT NEEDED TO PERFORM MAXIMUM DECONTAMINATION MEASURES FOR LEVELS A, B, AND C

Station 1:
a. Various Size Containers
b. Plastic Liners
c. Plastic Drop Cloths

Station 2:
a: Containers (20-30 Gallons)
b. Decon Solution or Detergent Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 3:
a. Containers (20-30 Gallons
OR
b. Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 4:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 5:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools

Station 6:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 7:
a. Containers (20-30 Gallons)
b. Decon Solution or Detergent Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 8:
a. Containers (20-30 Gallons)
OR
b. Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 9:
a. Air Tanks or Face Masks and Cartridge Depending on Level
b. Tape
c. Boot Covers
d. Gloves

Station 10:
a: Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools
d. Boot Jack

Station 11:
a. Rack
b. Drop Cloths
c. Bench or Stools

Station 12:
a. Table

Station 13:
a. Basin or Bucket
b. Decon Solution
c. Small Table

Station 14:
a. Water
b. Basin on Bucket
c. Small Table

Station 15:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 16:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 17:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 18:
a. Water
b. Soap
c. Small Table
d. Basin or Bucket
e. Field Showers
f. Towels

Station 19:
a. Dressing Trailer is Needed in Inclement Weather
b. Tables
c. Chairs
d. Lockers
e. Cloths

EQUIPMENT NEEDED TO PERFORM MINIMUM DECONTAMINATION MEASURES FOR LEVELS A, B, AND C

Station 1:
a. Various Size Containers
b. Plastic Liners
c. Plastic Drop Cloths

Station 2:
a. Containers (20-30 Gallons)
b. Decon Solution
c. Rinse Water
d. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 3:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools

Station 4:
a. Air Tanks or Masks and Cartridges Depending Upon Level
b. Tape
c. Boot Covers
d. Gloves

Station 5:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools

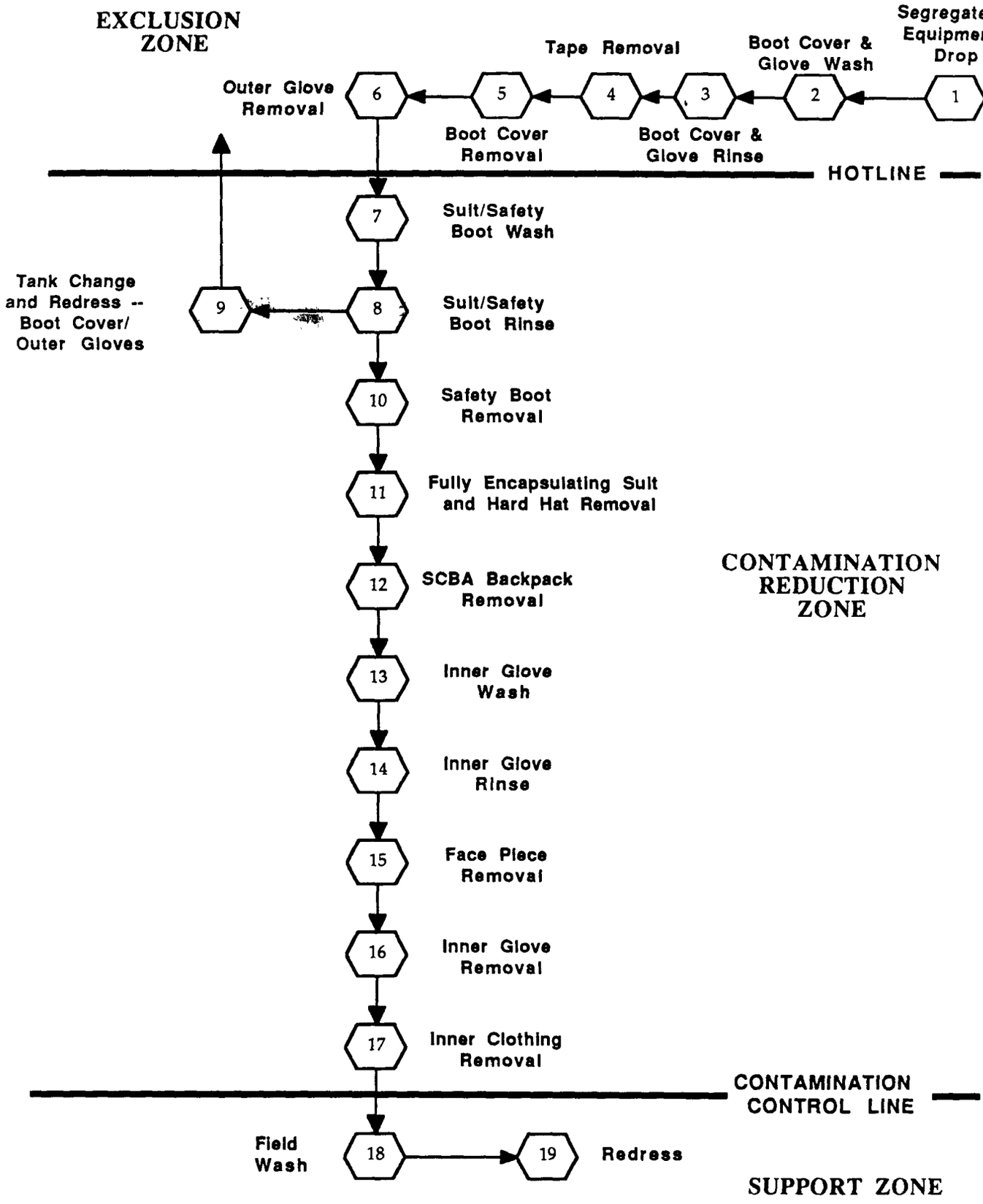
Station 6:
a. Plastic Sheets
b. Basin or Bucket
c. Soap and Towels
d. Bench or Stools

Station 7:
a. Water
b. Soap
c. Tables
d. Wash Basin or Bucket

MAXIMUM MEASURES FOR LEVEL A DECONTAMINATION

Station 1:	Segregated Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. During hot weather operations, a cool-down station may be set up within this area.
Station 2:	Boot Cover and Glove Wash	Scrub outer boot covers and gloves with decon solution or detergent/water.
Station 3:	Boot Cover and Glove Rinse	Rinse off decon solution from station 2 using copious amounts of water.
Station 4:	Tape Removal	Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	Remove boot covers and deposit in container with plastic liner.
Station 6:	Outer Glove Removal	Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Boot Wash	Wash encapsulating suit and boots using scrub brush and decon solution or detergent/water. Repeat as many times as necessary.
Station 8:	Suit and Boot	Rinse off decon solution using water. Repeat as many times as necessary.
Station 9:	Tank Change	If an air tank change is desired, this is the last step in the decontamination procedure. Air tank is exchanged, new outer gloves and boot covers are donned, and joints are taped. Worker returns to duty.
Station 10:	Safety Boot Removal	Remove safety boots and deposit in container with plastic liner.
Station 11:	Fully Encapsulating Suit and Hard Hat Removal	Fully encapsulated suit is removed with assistance of a helper and is laid out on a drop cloth or hung up. Hard hat is removed. Hot weather rest station may be set up within this area for personnel returning to site.
Station 12:	SCBA Backpack Removal	While still wearing facepiece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.
Station 13:	Inner Glove Wash	Wash with decon solution that will not harm the skin. Repeat as often as necessary.
Station 14:	Inner Glove Rinse	Rinse with water. Repeat as many times as necessary.
Station 15:	Face Piece Removal	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 16:	Inner Glove Removal	Remove inner gloves and deposit in container with liner.
Station 17:	Inner Clothing Removal	Remove clothing and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station 18:	Field Wash	Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available
Station 19:	Redress	Put on clean clothes.

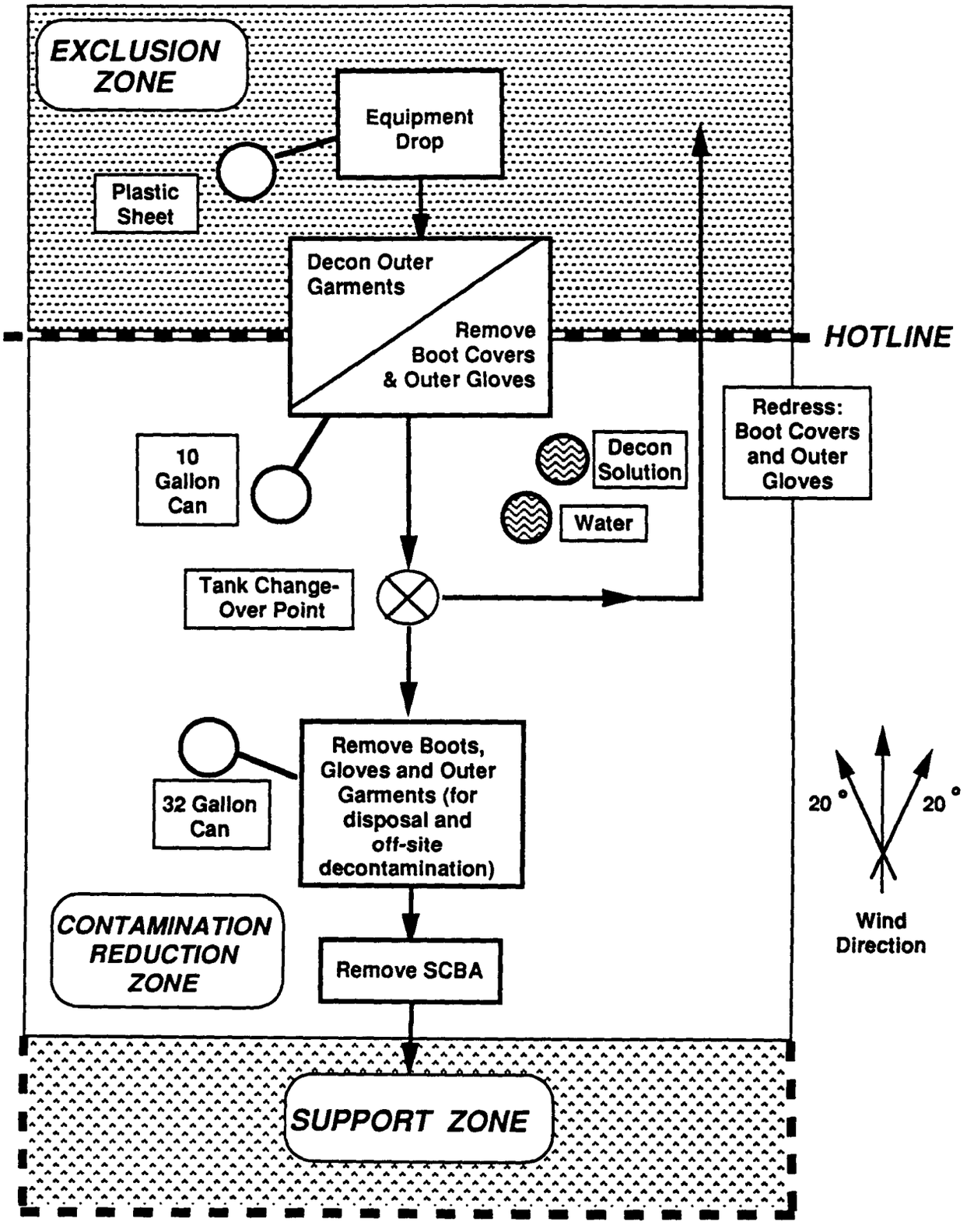
MAXIMUM DECONTAMINATION LAYOUT FOR LEVEL A PROTECTION



MINIMUM MEASURES FOR LEVEL A DECONTAMINATION

Station 1:	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool-down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	Scrub outer boots, outer gloves and fully-encapsulating suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Tank Change	If worker leaves Exclusion Zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
Station 5:	Boot, Gloves, and Outer Garment Removal	Boots, fully-encapsulating suit, and inner gloves are removed and deposited in separate containers lined with plastic.
Station 6:	SCBA Removal	SCBA backpack and facepieces are removed (avoid touching face with fingers). SCBA is deposited on plastic sheets.
Station 7:	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

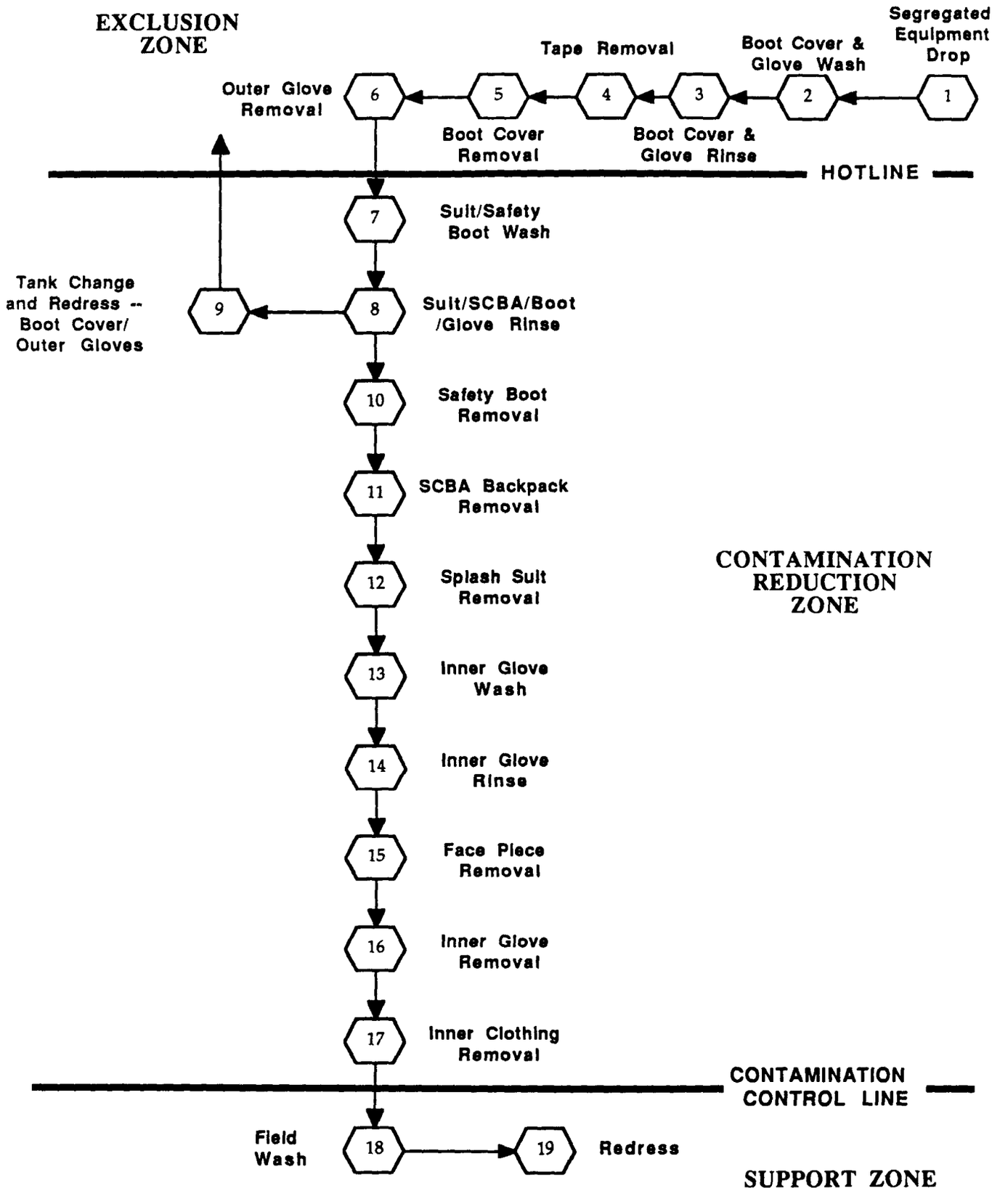
MINIMUM DECONTAMINATION LAYOUT FOR LEVELS A & B PROTECTION



MAXIMUM MEASURES FOR LEVEL B DECONTAMINATION

Station 1:	Segregated Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool-down stations may be set up within this area.
Station 2:	Boot Cover and Glove Wash	Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3:	Boot Cover and Glove Rinse	Rinse off decon solution from Station 2 using copious amounts of water.
Station 4:	Tape Removal	Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	Remove boot covers and deposit in container with plastic liner.
Station 6:	Outer Glove Removal	Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Safety Boot Wash	Wash chemical-resistant splash suit, SCBA, gloves, and safety boots. Scrub with long-handle scrub brush and decon solution. Wrap SCBA regulator (if belt mounted type) with plastic to keep out water. Wash backpack assembly with sponges or cloths.
Station 8:	Suit, SCBA, Boot, and Glove Rinse	Rinse off decon solution using copious amounts of water
Station 9:	Tank Change	If worker leaves exclusion zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
Station 10:	Safety Boot Removal	Remove safety boots and deposit in container with plastic liner
Station 11:	SCBA Backpack Removal	While still wearing facepiece, remove backpack and place on table. Disconnect hose from regulator valve.
Station 12:	Splash Suit Removal	With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station 13:	Inner Glove Wash	Wash inner gloves with decon solution.
Station 14:	Inner Glove Rinse	Rinse inner gloves with water.
Station 15:	Face Piece Removal	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers
Station 16:	Inner Glove Removal	Remove inner gloves and deposit in container with liner.
Station 17:	Inner Clothing Removal	Remove inner clothing. Place in container with liner. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants may have been transferred in removing the fully-encapsulating suit
Station 18:	Field Wash	Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 19:	Redress	Put on clean clothes.

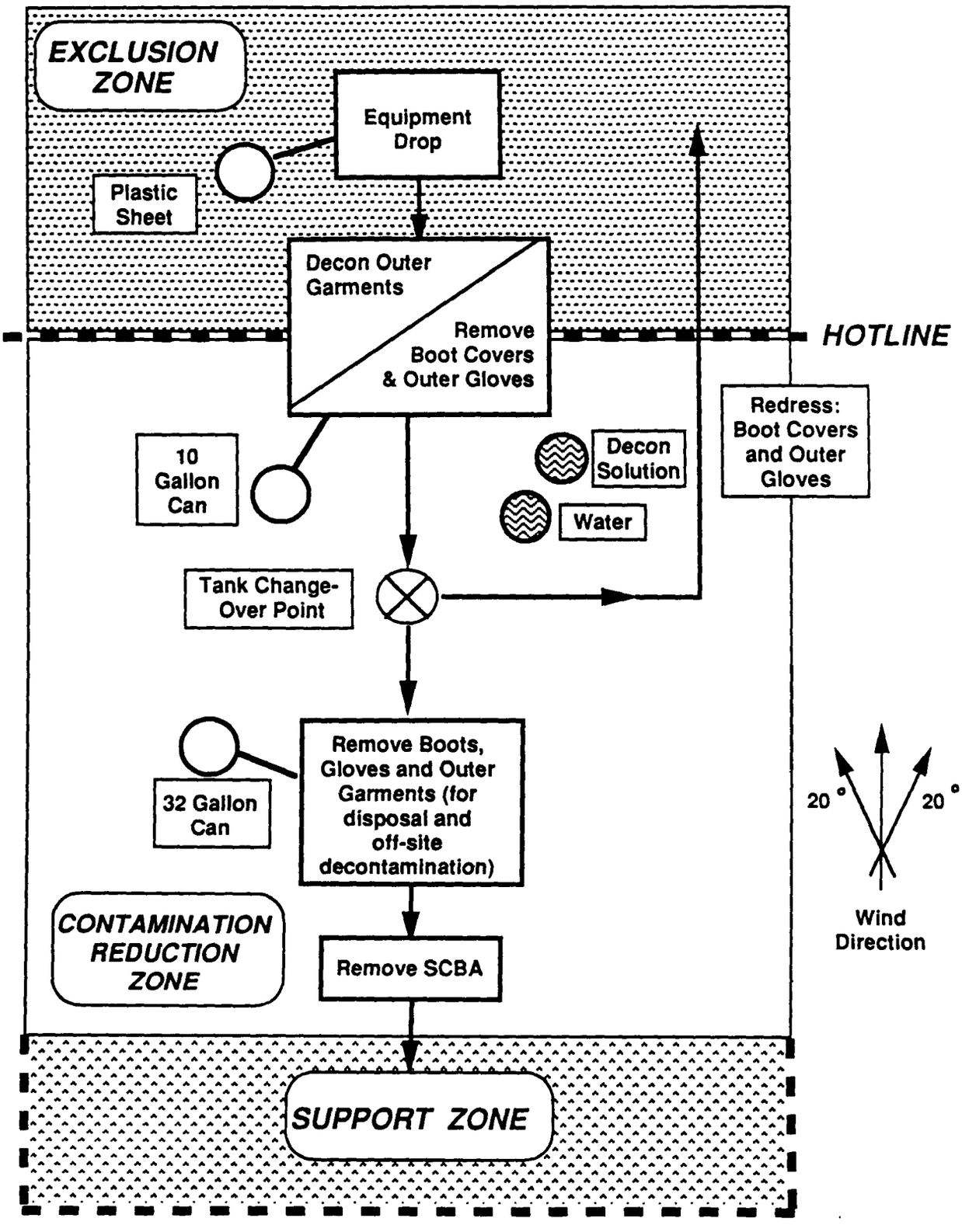
MAXIMUM DECONTAMINATION LAYOUT FOR LEVEL B PROTECTION



MINIMUM MEASURES FOR LEVEL B DECONTAMINATION

Station 1:	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool-down station may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	Scrub outer boots, outer gloves, and chemical-resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Tank Change	If worker leaves exclusion zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
Station 5:	Boot, Gloves, and Outer Garment Removal	Boots, chemical-resistant splash suit, and inner gloves are removed and deposited in separate containers lined with plastic.
Station 6:	SCBA Removal	SCBA backpack and facepiece are removed. Avoid touching face with finger. SCBA is deposited on plastic sheets.
Station 7:	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

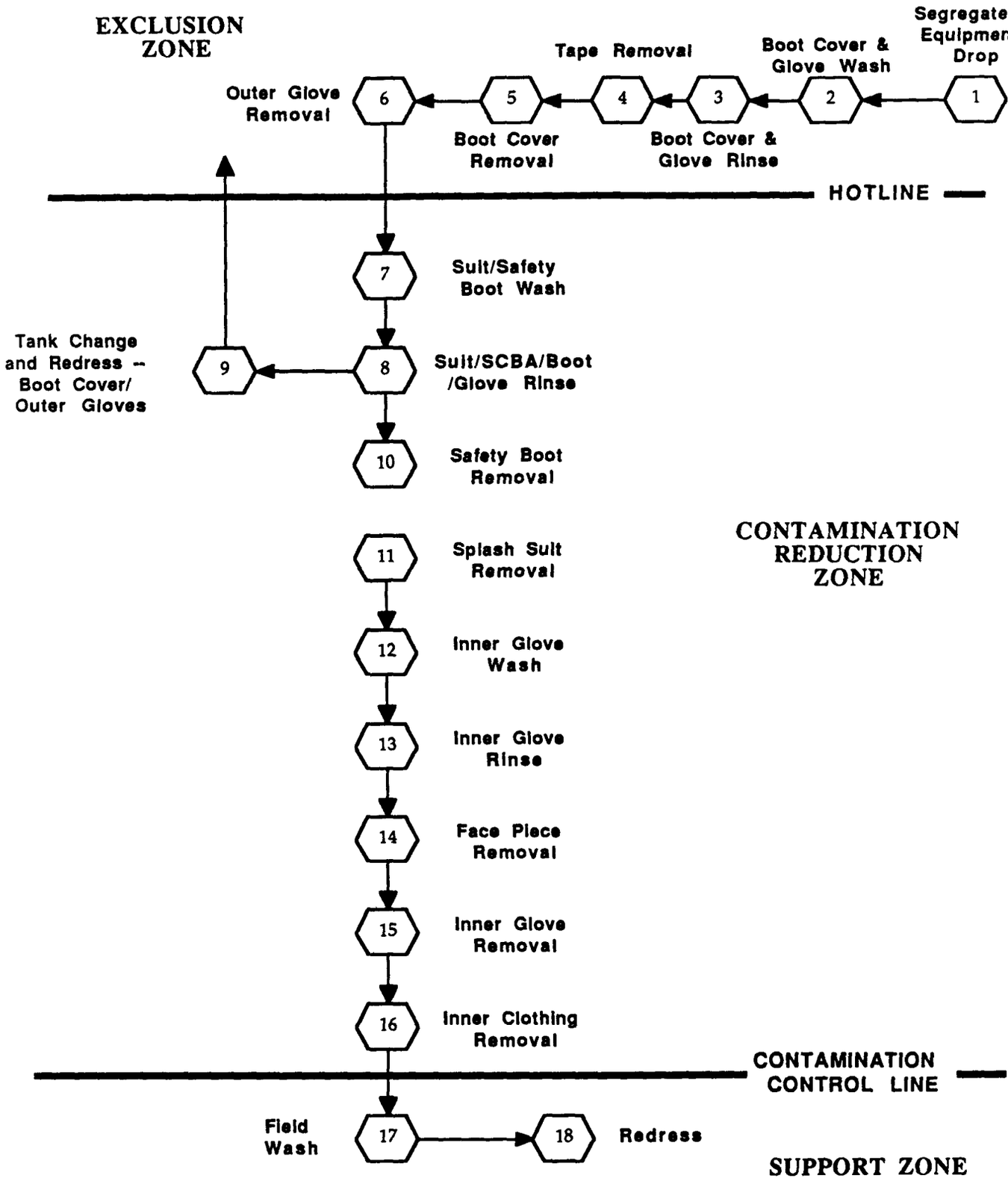
MINIMUM DECONTAMINATION LAYOUT FOR LEVELS A & B PROTECTION



MAXIMUM MEASURES FOR LEVEL C DECONTAMINATION

Station 1:	Segregated Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool-down station may be set up within this area.
Station 2:	Boot Cover and Glove Wash	Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3:	Boot Cover and Glove Rinse	Rinse off decon solution from Station 2 using copious amounts of water.
Station 4:	Tape Removal	Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	Remove boot covers and deposit in containers with plastic liner.
Station 6:	Outer Glove Removal	Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Boot Wash	Wash splash suit, gloves, and safety boots. Scrub with long-handle scrub brush and decon solution.
Station 8:	Suit, Boot, and Glove Rinse	Rinse off decon solution using water. Repeat as many times as necessary.
Station 9:	Canister or Mask Change	If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers are donned, and joints are taped. Worker returns to duty.
Station 10:	Safety Boot Removal	Remove safety boots and deposit in container with plastic liner.
Station 11:	Splash Suit Removal	With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station 12:	Inner Glove Removal	Wash inner gloves with decon solution.
Station 13:	Inner Glove Wash	Rinse inner gloves with water.
Station 14:	Face Piece Removal	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 15:	Inner Glove Removal	Remove inner gloves and deposit in lined container.
Station 16:	Inner Clothing Removal	Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off-site since there is a probability that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station 17:	Field Wash	Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available
Station 18:	Redress	Put on clean clothes.

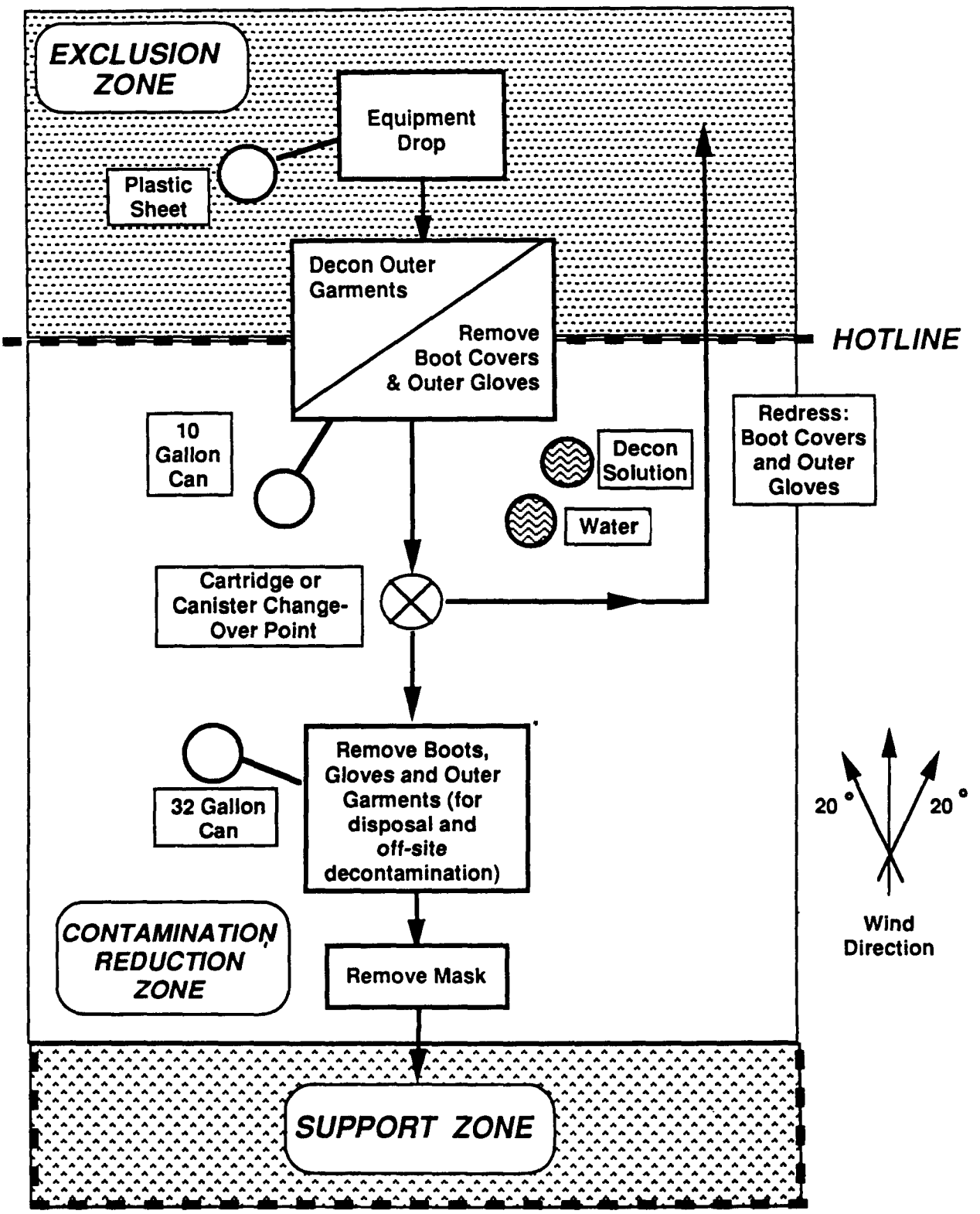
MAXIMUM DECONTAMINATION LAYOUT FOR LEVEL C PROTECTION



MINIMUM MEASURES FOR LEVEL C DECONTAMINATION

Station 1:	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool-down station may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	Scrub outer boots, outer gloves, and splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask Change	If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	Boots, chemical-resistant splash suit, and inner gloves are removed and deposited in separate containers lined with plastic.
Station 6:	Face Piece Removal	Facepiece is removed. Avoid touching face with fingers. Facepiece is deposited on plastic sheet.
Station 7:	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

MINIMUM DECONTAMINATION LAYOUT FOR LEVEL C PROTECTION



APPENDIX F

REGIONAL CONTACTS

This Appendix provides the addresses and telephone numbers of Headquarters and Regional contacts at both EPA and OSHA.

U.S. ENVIRONMENTAL PROTECTION AGENCY

U.S. EPA/Environmental Response Team
2890 Woodbridge Avenue
Building 18, MS 101
Edison, NJ 08837-3679
(908) 321-6740
24 Hour Hotline: (908) 321-6660

EPA REGIONAL OFFICES

- **EPA Region 1**
  John F. Kennedy Federal Building
  Room 2203
  Boston, MA 02203
  (617) 565-3715

- **EPA Region 2**
  Jacob K. Javitz Federal Building
  26 Federal Plaza
  New York, NY 10278
  (212) 264-2657

- **EPA Region 3**
  841 Chestnut Building
  Philadelphia, PA 19107
  (215) 597-9800

- **EPA Region 4**
  345 Courtland Street, NE
  Atlanta, GA 30365
  (404) 347-4727

- **EPA Region 5**
  Metcalfe Federal Building
  77 W. Jackson Boulevard
  Chicago, IL 60604
  (312) 353-2000

- **EPA Region 6**
  1445 Ross Avenue,
  9th Floor
  Dallas, TX 75202
  (214) 655-6444

- **EPA Region 7**
  726 Minnesota Avenue
  Kansas City, KS 66115
  (913) 551-7000

- **EPA Region 8**
  999 18th Street
  Suite 500
  Denver, CO 80202-2405
  (303) 293-1603

- **EPA Region 9**
  75 Hawthorne Street
  San Francisco, CA 94105
  (415) 744-1305

- **EPA Region 10**
  1200 6th Avenue
  Seattle, WA 98101
  (206) 442-1200

Note: Commercial and FTS telephone numbers are now identical with the institution of the new FTS system.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Occupational Safety and Health Administration
Department of Labor
200 Constitution Avenue NW
Room N-3647
Washington, DC 20210
(202) 523-8151
OSHA Notification Service (Complaint Hotline) for Emergency Situations
1-800-321-6742

OSHA REGIONAL OFFICES

- **OSHA Region 1**
  133 Portland Street, 1st Floor
  Boston, MA 02114
  (617) 565-7164

- **OSHA Region 2**
  201 Varick Street, Room 670
  New York, NY 10014
  (212) 337-2325

- **OSHA Region 3**
  Gateway Building, Suite 2100
  3535 Market Street
  Philadelphia, PA 19104
  (215) 596-1201

- **OSHA Region 4**
  1375 Peachtree Street NE, Suite 587
  Atlanta, GA 30367
  (404) 347-3573

- **OSHA Region 5**
  230 South Dearborn Street
  32nd Floor, Room 3244
  Chicago, IL 60604
  (312) 353-2220

- **OSHA Region 6**
  525 Griffin Street, Room 602
  Dallas, TX 75202
  (214) 767-4731

- **OSHA Region 7**
  911 Walnut Street
  Kansas City, MO 64106
  (816) 426-5861

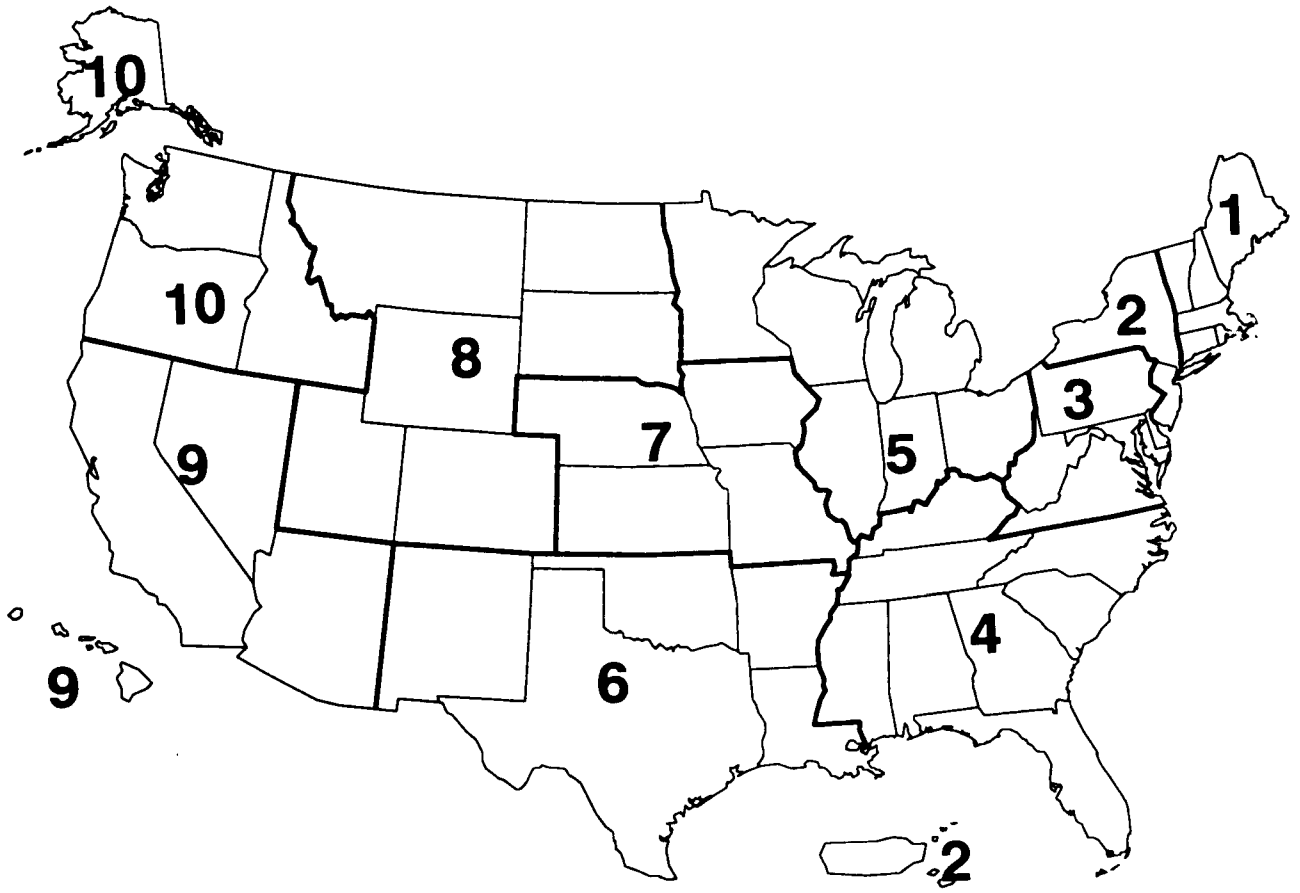
- **OSHA Region 8**
  1951 Stout Street
  Denver, CO 80204
  (303) 844-3061

- **OSHA Region 9**
  71 Stevenson Street
  Suite 415
  San Francisco, CA 94105
  (415) 744-6670

- **OSHA Region 10**
  1111 Third Avenue
  Suite 715
  Seattle, WA 98101-3212
  (206) 442-5930

Note: Commercial and FTS telephone numbers are now identical with the institution of the new FTS system.

U.S. EPA REGIONAL MAP



* U.S. G.P.O.:1992-311-893:60703

SECTION D

UNIFIED SAN DIEGO COUNTY EMERGENCY SERVICES ORGANIZATION

H.I.R.T.

HAZARDOUS MATERIALS INCIDENT RESPONSE TEAM PROGRAM

And

FIFTH AMENDED EMERGENCY SERVICES AGREEMENT

UNIFIED SAN DIEGO COUNTY
EMERGENCY SERVICES ORGANIZATION

H.I.R.T.
THE
HAZARDOUS MATERIALS INCIDENT
RESPONSE TEAM PROGRAM

Thomas Amabile,
Sr. Emergency Services Coordinator
Office of Emergency Services

Revised
August 2010

H.I.R.T.

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H I R T
THE HAZARDOUS MATERIALS INCIDENT RESPONSE TEAM

SECTION I EXECUTIVE SUMMARY

On October 1, 1986 a regional hazardous materials emergency response program was implemented in San Diego County. The program was designated the Hazardous Materials Incident Response Team or HIRT for short. The program was developed by, and is a program of, the San Diego County Unified Disaster Council. The Disaster Council is the governing body of the Unified San Diego County Emergency Services Organization. This Emergency Services Organization was established in 1961 under an Agreement of Joint Powers signed by the County of San Diego and all incorporated cities within the county.

The program calls for hazardous materials emergency response to be provided County-wide through the joint efforts of the San Diego Fire Rescue Department (SDFD) HAZMAT Response Team and the San Diego County Department of Environmental Health (DEH) Hazardous Materials Division (HMD). Each of these agencies has highly trained teams with many years experience in responding to hazardous materials emergencies. The cities and the County are the primary funding source for HIRT.

Under this program, a combined response is provided. The SDFD HAZMAT Response Team is responsible for isolating and containing the incident, stopping the release, effecting rescues and other related tasks. The HMD, on the other hand, is responsible for assessing the risk to public health and safety as well as the environment, taking the necessary steps to mitigate these hazards, insuring adequate clean-up of the area and conducting necessary enforcement activities. The combined team is referred to as the Hazardous Materials Incident Response Team, or HIRT.

HIRT will respond to the request of first responders at a hazardous materials incident. HIRT provides advice and technical support to the first responder but does not assume scene management responsibility. The first responder, or appropriate agency designated by law, maintains full control and authority over the incident and retains responsibility for any release of public information concerning the incident.

HIRT is normally activated through the City of San Diego's Fire Department Communications Center. HIRT can also be contacted directly by telephone or established radio channels. Communication and consultation between local agencies and the HIRT can be maintained while in route through the use of mobile telephones.

This program has a number of benefits, some of which include:

1. Makes available, throughout San Diego County, a team of highly trained hazardous materials response professionals.

2. Reduces potential liability to individual jurisdictions by having a specialized response capability available.

3. Makes available to member jurisdictions an expert resource for a wide variety of hazardous materials questions, problems and issues.

4. Eliminates unnecessary duplication of effort by having one program providing a coordinated and standardized response making the best use of available resources.

5. Provides a formal process for cost recovery which takes advantage of the most recent enabling legislation.

6. Makes grant monies and equipment more accessible by consolidating into a single request the needs and requirements of the entire area (4255 square miles) and total population (exceeding 3,000,000) of San Diego County.

7. Allows for user control of a regional program by using, as the administrative authority, an existing regional organization of which the user jurisdictions are members.

The HIRT program is considered to be a successful, effective and desirable program. User jurisdictions have expressed a high level of satisfaction. A nation-wide survey of hazmat response programs conducted in 1998 showed HIRT to be one of the most effective and cost efficient programs in the nation. A similar survey conducted in 2007 showed that HIRT continues to be one of the most cost-effective programs available.

The HIRT program, with its' regional approval, control and response, has become a model for other regions in the country to emulate. Interest from other areas remains high. Inquiries have been received from throughout California and from other states including Arizona, Florida, Massachusetts, Ohio and Oklahoma, to mention a few. Interest has also been expressed from British Columbia, Canada.

The following sections in this report provide greater detail on the various aspects of the HIRT program.

SECTION II BACKGROUND

Emergencies created by releases of hazardous wastes and/or materials occur in San Diego County on a daily basis. Many of these emergencies are confined to a small area, do not pose a public health threat, and are easily mitigated by the responsible party. Frequently, however, there are hazardous material incidents that require an emergency response by a fire agency, the County Health Services or both. In recent years, these types of incidents have declined from over seven and a half per week to just over five and a half per week. This is attributed to better compliance with regulations and safety practices by users of hazardous materials. In addition, each local fire agency has individuals trained as hazardous materials technicians and/or specialists. These individuals allow the local agency to deal with minor incidents (such as a small diesel spill resulting from a traffic accident) themselves, without calling upon the HIRT Team.

Any of these incidents, large or small, has the potential of becoming a major problem. Response requires highly trained personnel and expensive, specialized equipment. Initial training for emergency responders can exceed 200 hours of instruction in chemistry, hazard analysis, risk assessment, personal protection and safety and in the use of widely varied monitoring equipment. All HIRT staff are required to be state certified HazMat Technicians or Specialists. Personnel, training and equipment costs are considerable. Specially outfitted vehicles can range from $75,000 to $500,000 or more. Personnel require on-going training and recertification. Even with the Homeland Security Grants available through the Department of Homeland Security, it remains cost prohibitive for most jurisdictions to establish their own hazardous materials response program.

The Background:

On December 13, 1984, the San Diego County Fire Chiefs Association considered a proposal to staff a hazardous materials vehicle for countywide incident response. The Association sent the proposal to the San Diego County Unified Disaster Council for consideration. (The Disaster Council is the governing body of the Unified San Diego County Emergency Services Organization, a joint powers organization of which the County and all incorporated cities in the County are members.)

On March 28, 1985, the Disaster Council took the matter under consideration. Recognizing that the costs involved in staffing, equipping and training some 50 fire agencies to handle hazardous materials incidents would be prohibitive and also believing that a regional response program would be the most efficient and cost-effective approach to handle such incidents, the Council established a special task force to review the problem and return

with recommendations. The task force consisted of representatives from the Unified Disaster Council, the County Department of Health Services, the San Diego City Fire Department, and the Office of Disaster Preparedness.

On May 16, 1985, the task force presented to the Council a draft proposal for a regional response program. The Council reviewed and approved the draft proposal and directed that a full scale feasibility study be initiated.

On September 26, 1985, the task force presented several options to the Council. The option calling for a joint response team consisting of the San Diego City Fire Department (now the San Diego Fire Rescue Department) HAZMAT Response Team and the County's Department of Health Services Hazardous Materials Management Division (now the Department of Environmental Health's Hazardous Materials Division) was selected. The cost of the program would be distributed to all participating jurisdictions based on a formula of population and assessed valuation. The City of San Diego's share would be one-half of their costs. At that same meeting, the Council directed that the selected option be further expanded and refined. The Council also authorized the Chairman to send letters to the City Mayors advising them of the program and requesting their support. It was also decided to present the program to the County and City Managers Association for their review and input. This was done on December 6, 1985.

On November 21, 1985 at a special meeting of the Council, the revised proposal was reviewed, modified and approved. The Council also referred the program to the County and Cities for consideration. The Council recommended approval of the program and inclusion in their 1986-87FY jurisdictional budgets.

Staff was also directed to amend the Joint Powers Agreement under which the Disaster Council functions. The primary purpose of the amendments was to allow such regional programs to become operational. The amended JPA was ultimately approved by the Council on April 25, 1986. It was also referred to the Cities and the County for consideration and approval.

During the next several months, the program was reviewed and considered for budgeting by the County and 16 Cities. The amended Joint Powers Agreement was also being considered by the member jurisdictions during this period. All jurisdictions eventually approved and funded the program for the 1986-87FY. They also approved the amendments to the JPA. Two newly incorporated cities, the Cities of Encinitas and Solana Beach, were invited to join the Unified Organization and the hazardous materials program. Both cities accepted. It was decided to call the program the Hazardous Materials Incident Response Team or HIRT for short.

October 1, 1986 marked the official kick-off for the HIRT Program. In the initial 10 years

or so, HIRT responses steadily increased to between 300 and 500 per year. In subsequent years, the number of responses has stabilized to just under 300 per year on average. These responses have run the gamut from a strange odor emanating from rotting garbage to fuel spills, illegal drug laboratories and radioactive materials. Many of the responses have been on drug related incidents, although the number of drug related responses has fallen over the past several years. Geographically, the responses have occurred in every part of the County (4,255 square miles). Some responses have been made by helicopter through the Sheriff's ASTREA program.

There remains a high level of satisfaction on the part of the users with the response services provided by the Team. In surveys conducted in 1987, 1998 and 2007 most responders felt the program was effective and gave it a high rating. Smaller jurisdictions especially felt the program was beneficial. Virtually every responder felt the program should continue. Where problems were indicated, corrective action has been taken. The program remains dynamic, being upgraded as resources and technology become available.

The issue of what would happen to the HIRT program if a provider jurisdiction were to pull out of the UDC was discussed at the June 19, 1990 HIRT Policy Committee meeting. An Ad Hoc Subcommittee was established to examine various alternatives to the current program. These alternatives included maintaining the program as is, eliminating the program or expanding the program into regional teams.

On October 16, 1990, the Ad Hoc Subcommittee presented its report to the full Policy Committee. It was decided to maintain the HIRT program as is for the 1991-92 fiscal year while continuing to explore development of regional teams. Initial funding for the first regional team was approved by the Policy Committee on December 11, 1990. The new team was to be based out of Santee and become operational during FY 1992-93.

A HIRT Providers Options Subcommittee was established on February 19, 1991. This subcommittee was tasked with developing a plan for the new response units to be obtained under an expanded program. The subcommittee presented its report on June 18, 1991. The recommendation called for a total of four fire response teams to be implemented over a five to seven year period. HMD would continue to operate as it has since the program's inception. At this same meeting two additional subcommittees were formed. The first was to develop recommendations for training standards, the second to develop a new HIRT implementation plan. One goal of the implementation plan was to keep program costs as low as possible to the member jurisdictions.

The HIRT Training Subcommittee presented their report on October 15, 1991. Their recommendations called for a team trained to the CSTI/State Fire Marshall HAZMAT Technician/Specialist standard.

As a result of rising program costs and diminished jurisdictional budgets the Policy Committee postponed indefinitely any expansion of the HIRT Program at the December 11, 1991 meeting.

On March 19, 1992 the UDC approved the development of a Request for Proposal (RFP) for HIRT services. This would open up the potential provider base beyond the City of San Diego and the County. A subcommittee of the HIRT Policy Committee was established to develop the RFP. The UDC approved the final RFP at their September 17, 1992 meeting. The San Diego County Department of Purchasing and Contracting issued the RFP on behalf of the UDC. Three proposals for service were received by the November, 1992 due date.

Following established County procedures, a Review Committee was established to rate all of the proposals received. Membership on the Review Committee was restricted to individuals from the member jurisdictions not associated with the HIRT program.

The first proposal reviewed was from a private firm that indicated it intended to use personnel trained to Hazardous Waste Operator standards (HAZWOPPER) for emergency response. This bid was considered as non-responsive by the Review Committee. The second proposal was from the San Diego Fire Department. The third was from County Environmental Health. The review committee determined that the optimum level of service would be provided if both of the remaining proposals were merged into one. San Diego Fire and Environmental Health were asked to explore the possibility of submitting a joint proposal. A joint proposal was submitted by both agencies in February 1993.

On March 18, 1993 the UDC approved the joint proposal with the contract to become effective on July 1, 1993. The contract called for a two-year service commitment with options for four additional two-year period extensions. The contract ran through all four extensions.

In 1996 the San Diego County Fire Chiefs Association took a close look at the HIRT program to see if it was still cost effective and efficient. This examination included telephone surveys of other large jurisdictions with a hazardous response capability. The survey results indicated that no other jurisdiction has the dual response capability (Fire and Environmental Health) that HIRT provides. Their conclusion was that the HIRT program still provides the most effective and efficient hazardous materials response available anywhere.

In 1998 a nation-wide survey was conducted to compare the HIRT program with similar hazardous materials response programs in place in large metropolitan regions. Survey results show that no other hazardous materials emergency response program in the

country provides more response capabilities than HIRT. Although hard budget data was received from only a very few survey participants, extrapolation of the limited data received indicates that HIRT is one of the most cost effective, if not the most cost effective, programs of its' kind.

In 2002 a revised RFP was issued for HIRT services. Once again, a joint proposal was received from San Diego Fire and Environmental Health. This new contract went into effect on July 1, 2004. As with the first contract, it is for 2 years and may be renewed 4 for times for a total of 10 years.

In August of 2007 another survey was conducted to assess HIRT services. As before, all participants expressed satisfaction with the service delivery levels, but expressed concern over the increasing cost of the program.

IN 2008 a survey was conducted to determine the cost of providing hazardous materials response services in major metropolitan areas of the country. We looked at Atlanta, Chicago, Dallas, Denver, Los Angeles, New York, San Francisco, Seattle and St. Louis. With an annual cost of $1.5M HIRT continued to be well below the average nation-wide cost of $2.5M per year.

The cost of the program was still considered to be prohibitively high for many of the participating jurisdictions. In late 2008, early 2009 the HIRT Policy Committee undertook a series of meetings to discuss the program, services provided and costs. The consensus that developed out of these meetings was that it was desired to keep services levels as is, but that staff should explore ways of both decreasing program costs and increasing program revenue (to offset member costs). As a result of these discussions, the Policy Committee was directed to explore additional funding sources, such as grants.

SECTION III ORGANIZATION AND STRUCTURE

HIRT is a program of the San Diego County Unified Disaster Council. The Council is the governing body of the Unified San Diego County Emergency Services Organization. This regional organization was created in 1961 by an Agreement of joint powers (JPA) executed by the County of San Diego and all the cities in the county. Today there are eighteen incorporated cities in San Diego County, all of which are active, participating members of the Emergency Services Organization and of the HIRT program.

The Disaster Council established the HIRT Policy Committee and delegated, to it, general authority for program direction and control. However, the Council has retained for itself final authority over the program. This includes:

1. Appointments of four UDC members to the HIRT Policy Committee which shall include representatives from the northern, southern and eastern portions of the County and a member at large,
2. Final approval of the annual HIRT operating budget and increases thereto,
3. Final approval of funding formulas used to determine member share assessments,
4. Final approval of member share assessments, and
5. Final approval of major program changes.

The HIRT organization chart on the following page shows the various groups and agencies that are part of the program. Following is a brief discussion of the major elements of the organization.

HIRT Policy Committee: The HIRT Policy Committee was established by and is a Committee of the Unified Disaster Council. The membership of the Committee consists of:

- Four (4) members of the Disaster Council appointed by the Council and representing, one each, the northern, southern and eastern portions of the County and the County at large. These are voting members.

- One (1) representative of the San Diego County Fire Districts Association, a non-voting member.

- One (1) representative from the City of San Diego Fire Rescue Department (SDFD), a non-voting member.

- One (1) representative from the County Department of Environmental Health (DEH)

Hazardous Materials Division (HMD), a voting member representing the County of San Diego and

- Representatives from other agencies the HIRT Policy Committee may choose to appoint. Currently, Camp Pendleton Fire Department, MCAS Miramar Fire Department, several Tribal fire agencies, the County Sheriff, California Highway Patrol, State OES and CalTrans, participate on the Policy Committee as non-voting members.

The Committee is charged with the responsibility to insure the HIRT Program operates according to established guidelines, develops policy statements, makes recommendations to the Disaster Council, reviews and approves procedures and operational plans and may take any other action necessary to insure efficient operation of the HIRT program. The Committee is empowered to establish special Tasks Forces and Subcommittees as necessary to help carry out its' responsibilities.

Operations Group: The Hazardous Materials Incident Response Team (HIRT) Program has become very successful since its' inception on October 1, 1986. The program's success is directly attributable to the many people who have invested their time and effort. The success is also a reflection of the commitment of the primary service providers. Those providers are:

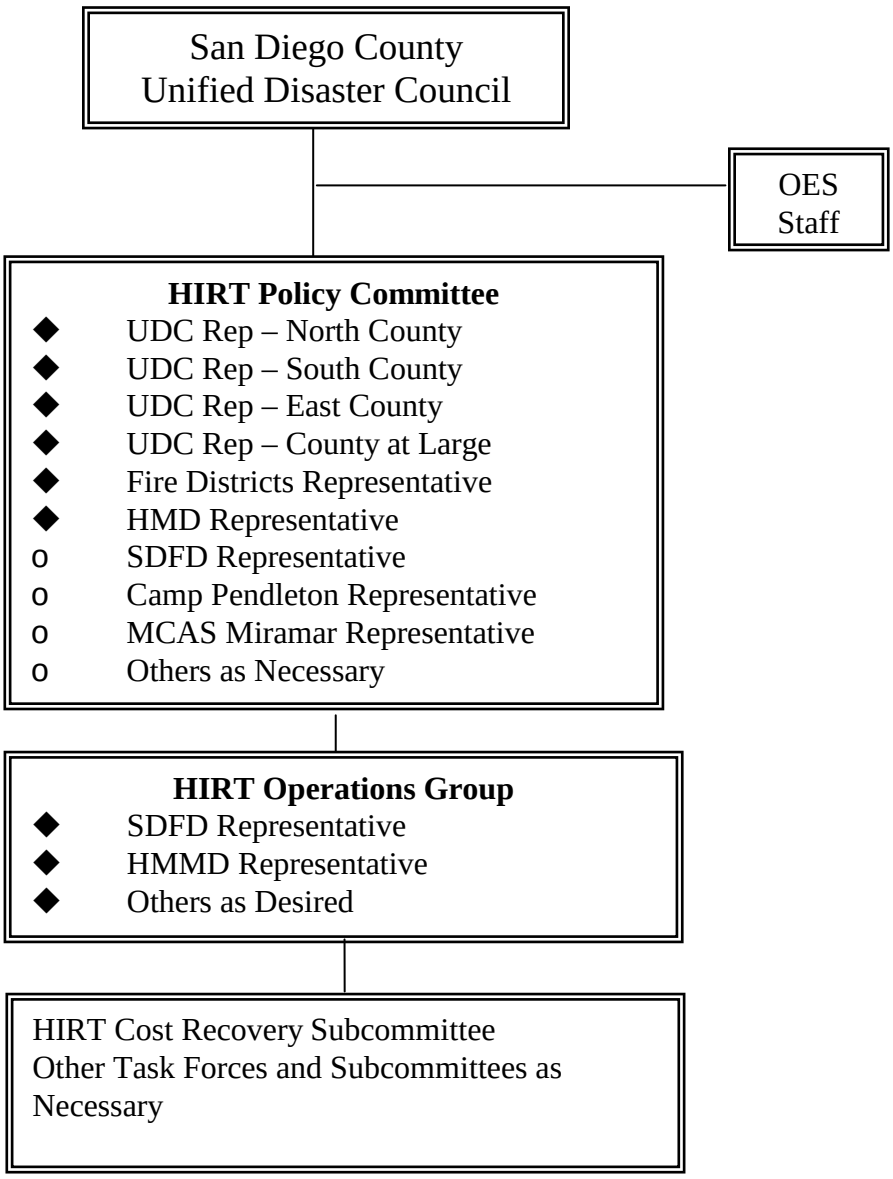
1. **The City of San Diego Fire-Rescue Department (SDFD) Hazardous Materials Response Team:** Their primary responsibility is hazard mitigation, which includes isolation of the scene; containment and stoppage of the release; effecting rescues and performing other related tasks as necessary.

2. **The Hazardous Materials Division (HMD) of the County of San Diego Department of Environmental Health:** Their primary responsibility is the assessment of public health and environmental risks and impacts. This includes determination of the need for evacuations; making arrangements for necessary protective measures; assessing the need for clean-up of contaminated soil, water or other surfaces; determining the adequacy of clean-up; implementing enforcement measures as required, and other related tasks as necessary.

Other agencies may be invited to become participants or members of the Operations Group as necessary or as a situation may dictate. All member agencies are invited to participate

in the Operations Group.

HIRT Organization Chart



◆ Indicates a Voting Member

o Indicates a Non-voting Member

HIRT Staff Support: **The Office of Emergency Services (OES)** serves as staff to the Unified Disaster Council and staff to the HIRT program. Their primary responsibility is to serve as the administrative arm of the HIRT program which includes: developing and monitoring the annual budget; implementing cost recovery activities; coordinating member billings; collecting program revenues; maintaining the financial and administrative records, and other related tasks and necessary.

Subcommittees and Task Forces: The HIRT Policy Committee can set up special subcommittees and task forces as necessary to fulfill its' charges. Currently it has A standing subcommittee to review and recommend on contested cost recovery billings. The Committee has also established a Training Subcommittee to review and recommend on regional hazardous materials training requirements for member jurisdictions and first responders.

SECTION IV MEMBERSHIP

The County of San Diego and all eighteen incorporated cities in the County are members of the HIRT program. Each member jurisdiction, with the exception of the City of San Diego, share in funding the program. Member contributions were based on a formula of population and assessed property valuation. The City of San Diego participates as a service provider.

The formula was reviewed in 1990. Using three years of response history, the HIRT Policy Committee reviewed a number of alternate funding options. Most of these options included some consideration of responses to jurisdictions. The Committee developed a new formula, taking jurisdictional responses into consideration, and submitted it to the Unified Disaster Council, for consideration with the 1990-91FY HIRT budget. The new formula called for forty percent (40%) of a member's share to be based on assessed property value, forty percent (40%) on population and twenty percent (20%) on the number of HIRT responses into the member jurisdiction during the past year.

The Policy Committee also reviewed the responses to military bases and opportunities for including them into the HIRT program. U.S. Marine Corps Base Camp Pendleton contracted with HIRT between 1992 and 2008 for emergency response services at a set annual fee. In 1999 MCAS Miramar, Campo, Las Postas, the Cuyapaipe and Pala Tribal Reservations also contracted for HIRT services for set annual fees. The Viejas Tribal Reservation became a member in 2006, with Rincon, San Pasqual and Santa Ysabel joining in 2007. MCB Camp Pendleton established a hazardous materials team in 2009. After some initial negotiations, an MOU between HIRT and MCB Camp Pendleton was approved by the UDC. Each will provide hazardous materials response support to the other as resources allow.

In 1999 the HIRT Policy Committee again reviewed the Member Shares Formula. There was concern that the program was not being utilized to its maximum because each run had the potential to increase the requesting jurisdiction's member share. After much discussion and review by an Ad Hoc Funding Formula Committee, the Disaster Council approved a revision to the formula, brining it back to the original 50-50 (Population and Property Value) formula used at the programs' inception. This formula was used to calculate the member shares for Fiscal Year 00-01 and remains in effect.

SECTION V BUDGET AND FINANCE

The HIRT Provider Contract is a two-year contract. Accordingly, the HIRT Budget is approved as a two-year budget. The approved HIRT Budget for fiscal years 1999-2000 and 2000-01 is $884,100 per year. The funding to support the program includes $728,812 from member contributions, $79,375 from other revenue and a $75,913 offset from the HIRT Trust Fund the first year and $764,726 for member contributions, $75,913 from other revenue and $43,461 from the HIRT Trust Fund operating balance the second year.

COSTS	2008-09FY	2009-10FY	CHANGE
San Diego Fire Dept	$ 838,848	$845,080	$ 6,233
HMMD	658,648	658,648	0
OES	90,059	90,059	0
TOTAL COSTS	$1,587,553	$1,593,786	$ 6,233
REVENUES			
Member Shares	$1,538,425	$1,439,658	$<98,767>
MCAS Miramar	19,128	19,128	0
Indian Tribes	20,000	20,000	0
Cost Recovery	5,000	5,000	0
Interest Earned	5,000	5,000	0
State/federal Grants	0	105,000	105,000
Other Misc./Prior FY	0	0	0
	$ 1,587,553	1,593,786	6,233

SECTION VI

PROGRAM FUTURE

The future for the HIRT program holds many challenges. While the number of hazardous materials incidents requiring a response has stabilized, more stringent Federal and State regulations, requiring a greater share of local resources, have recently been enacted. With concern for the environment and the health and safety of our citizens growing, we can anticipate additional legislation in the not-too-distant future.

One of the major ongoing objectives of the program is to keep costs and member contributions as low as possible. However, with the regional growth that is occurring and the subsequent pressure for program expansion, some cost increases can be expected. In addition, future replacement of capital equipment has also become a concern. Depreciation of vehicles and equipment are now factored in to the contract costs submitted by the service providers.

The HIRT program is also facing a number of other interesting challenges, one of which is the addition of new members. Of particular interest are the remaining local area military bases and Indian reservations, as well as those federal agencies in the border area and the U.S. Forest Service in the Cleveland National Forest. Some success has been seen in this area.

The HIRT Program continues to be one of the best bargains in the County. It provides every jurisdiction in San Diego County with access to a highly trained team of hazardous materials specialists. If each jurisdiction were to develop their own hazardous materials team, the costs would be prohibitive, greatly exceeding the current budget. The HIRT Program is, and will remain, the best insurance policy the County, Cities and member agencies could have against a major hazardous materials accident.

FIFTH AMENDED
EMERGENCY SERVICES AGREEMENT

This Joint Powers Agreement is entered into by and between the County of San Diego, a political subdivision of the State of California (County) and the incorporated cities within the County who are signatories hereto (City or Cities). Nothing in this agreement is intended to lessen participating member jurisdictions' authority over and responsibility for events occurring within their jurisdiction. Nothing in this Agreement is intended to be a means by which state or federal emergency management requirements can be passed on to member jurisdictions.

WITNESSETH

WHEREAS, Government Code section 8605 designates each county as an operational area for emergency purposes and Government Code section 8610 authorizes each county and the cities in each county to "organize and structure their operational area" and to create disaster councils; and

WHEREAS, the County and the Cities desire to provide for a unified emergency services organization in the San Diego Operational area; and

WHEREAS, the purpose of the organization is to coordinate and facilitate regional plans and programs for the preservation and safety of life and property, and to make provisions for the execution of plans, programs, and mutual aid assistance in the event of multi-jurisdictional emergencies or disasters; and

WHEREAS, the parties previously entered into the Fourth Amended Emergency Services Agreement of 1991; and

WHEREAS, the parties to said Agreement desire to amend the Agreement to clarify that this is a Joint Powers Agreement that creates the Emergency Services Organization as an agency separate from the parties; and

WHEREAS, the parties desire to further amend the Agreement to include all provisions required for joint powers agreements, all of which are incorporated into this Fifth Amended Emergency Services Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto mutually agree as follows:

A. This Agreement is made pursuant to Government Code section 6500 and following relating to the joint exercise of powers common to public agencies.

1. The County and the Cities each possess the common powers referred to above.

2. The purpose of this Agreement is to exercise such powers jointly by creating the Unified San Diego County Emergency Services Organization, a public agency that is separate from the parties to this Agreement.

B. The Unified San Diego County Emergency Services Organization is hereby created and established to facilitate planning and preparedness activities on an Operational Area level to include the following services:

1. Aid, assist and advise the County and each City in the preparation and development of an emergency plan for the County and for each City and in the County.

2. Prepare and develop Operational Area emergency procedures and guidelines which may be used by participating members and which provide for needs and the coordination of those needs in the event of a major disaster or other emergency.

3. Aid, assist and advise the County and the Cities with the training of public employees for the emergency services organization.

4. Provide countywide emergency services programs as may be determined and approved by the San Diego County Unified Disaster Council, hereinafter mentioned and referred to as Unified Disaster Council or Council.

   From time to time special County-wide programs may be developed under this Agreement. In those situations, the Unified Disaster Council may establish operational and funding requirements for participation and will seek approval of participating members. Where programs may not be supported by one or more jurisdictions, such programs may be executed between agreeing jurisdictions.

   Upon approval of the Unified Disaster Council, these programs may include participation by non-member agencies or jurisdictions.

5. Develop and keep current on a countywide basis an inventory of all equipment and supplies available now in the county for use in the event of an emergency. Such inventory listing will be made available to all participating members.

6. Provide technical assistance in obtaining any federal or state funds which may become available to the County and the Cities for emergency purposes and in the acquisition by the County and the Cities of surplus property for emergency services purposes.

7. Enter into contracts which are necessary and proper to provide the services authorized in Paragraphs A1 through B6 above, including contracts for any services necessarily implied from those expressed.

8. The Unified San Diego County Emergency Services Organization shall not exercise the powers listed above in a manner that exceeds the County's authority to exercise those powers.

C. The County and Cities, who are signatory to this agreement, adopt the Operational Area concept as identified in Chapter 7 Section 8605 of Division 1 of Title 2 of the California Government Code, and support established mutual aid agreements as the basis for multi-jurisdictional emergency operations. During such multi-jurisdictional emergencies, the staff of the organization shall assist the Operational Area Coordinator in carrying out his or her responsibilities under these mutual aid agreements.

D. The County and Cities signatory to this agreement shall:

1. Become members of the Unified San Diego County Emergency Services Organization.

2. Delegate to the Unified Disaster Council hereinafter mentioned, whatever authority it is lawful for the County and Cities to delegate when such delegation shall be deemed necessary by said Council. This delegation of authority shall be restricted to whatever expenditure of County and City funds and use of County and City personnel, equipment and supplies as are made available by the County and the Cities for emergency services purposes.

E. In consideration of these mutual promises, it is hereby mutually agreed that:

1. The County will pay fifty percent (50%) of the cost of establishing and maintaining the Unified San Diego County Emergency Services Organization.

2. The Cities signatory hereto will pay fifty percent (50%) of the cost of maintaining the Unified San Diego Emergency Services Organization, said fifty percent to be apportioned among the cities in accordance with the following formula:

   a) One-half of the 50%, or 25% of the total budget, shall be apportioned by people units or population in participating Cities.

   b) The remaining 25% of the total budget shall be apportioned by the total assessed valuation of real and personal property in participating Cities.

3. For the purposes of this Agreement the total assessed valuation of real and personal property in all the participating Cities shall be the amount assessed in the fiscal year prior to the budgeted year, as found in the Property Valuation and Tax Rate--San Diego County, California, published by the Auditor and Controller of the County of San Diego.

4. If at the end of any fiscal year there remains an unencumbered balance derived from budget savings or revenues received for emergency services purposes, such balance shall be credited to the participating members at the rate of their contribution for that fiscal year, towards the following fiscal year for the expenditures of the Unified San Diego County Emergency Services Organization.

5. In the event a participating member withdraws from this agreement, such member will receive its refundable share of the unencumbered balance for that fiscal year in a single payment.

6. In the event a participating member contributes more than the formula requires towards maintaining the Unified San Diego County Emergency Services Organization, that contributing member shall determine where the excess contributions will be applied.

7. In the event a non-participating organization or agency contributes funding to the Unified San Diego County Emergency Services Organization, that contributing organization or agency shall determine where the contribution will be applied.

8. If application of contributions received under paragraphs E6 or E7 above, affect the completion of tasks identified in an annual workplan, approved by the Unified Disaster Council, acceptance of such contributions shall be subject to Disaster Council approval.

9. The San Diego County Unified Emergency Services Organization shall account for and shall maintain reports of all funds received and all disbursements made. These reports shall be provided to any party upon request.

10. The County Treasurer shall be the depositary and have custody of all the money of the Unified San Diego County Emergency Services Organization and shall do the following:

    a. Receive and receipt for all money of the Unified San Diego County Emergency Services Organization and place it in the County treasury to the credit of the Emergency Services Organization;

    b. Be responsible upon his or her bond for the safekeeping and disbursement of all Emergency Services Organization money held by him or her;

    c. Pay, when due, out of money of the Emergency Services Organization held by him or her, all sums payable on outstanding bonds and coupons of the Emergency Services Organization;

d. Pay any other sums due from the Emergency Services Organization from Emergency Services Organization money, only upon warrants drawn by the County Auditor/Controller pursuant to paragraph E 11;

e. Verify and report in writing at least quarterly each year to the Emergency Services Organization and to each party to this Agreement the amount of money he or she holds for the Emergency Services Organization, the amount of receipts since his or her last report, and the amount paid out since his or her last report; and

f. Invest funds of the Unified San Diego County Emergency Services Organization pursuant to Government Code section 53601.

11. The County Auditor and Controller/Chief Financial Officer shall perform the functions of auditor and controller for the San Diego County Unified Emergency Services Organization and shall do the following:

a. Draw warrants to pay demands against the Emergency Services Organization when the demands have been approved by the Director, Office of Emergency Services, or his or her designee;

b. Make or contract with a certified public accountant or public accountant to make an annual audit of the accounts and records of the Emergency Services Organization except for those accounts and records that are subject to an annual audit by the state or the United States. In such case, the minimum requirements of the audit shall be those prescribed by the Controller for special districts under Government Code section 26909 and shall conform to generally accepted auditing standards; and

c. File the audit report with each party to this Agreement and with the County Auditor and Controller.

12. The costs of the audit shall be borne by the San Diego County Emergency Services Organization and shall be a charge against the unencumbered funds of the Emergency Services Organization available for this purpose.

13. The San Diego County Unified Emergency Services Organization may, by unanimous request of its governing body, replace the annual special audit with an audit covering a two-year period.

14. The annual audit requirement specified above shall not apply if the Controller audits the financial statements of the Emergency Services Organization to satisfy federal audit requirements.

15. The San Diego County Board of Supervisors shall determine the charges to be made against the San Diego County Unified Emergency Services Organization for the services of the treasurer and auditor.

16. The Unified San Diego County Emergency Services Organization shall administer this Agreement.

17. The debts, liabilities and obligations of the San Diego County Unified Emergency Services Organization shall not be debts, liabilities and obligations of the parties to this Agreement, but shall be the debts, liabilities and obligations of the San Diego County Emergency Services Organization.

18. Upon termination of this Agreement any surplus money on hand shall be returned to the parties in the same ratio as the parties contribute to the cost of the San Diego County Unified Emergency Services Organization as set forth in paragraphs E 1 and 2.

F. The San Diego County Unified Disaster Council is hereby established and is the policy making body of the Unified San Diego County Emergency Services Organization. The Unified Disaster Council consists of the following:

1. The Chairperson of the County Board of Supervisors who shall be the Chairperson and who shall represent the County.

2. The Coordinator of the Unified San Diego County Emergency Services Organization who shall be the Vice-Chairperson and who is selected by the Unified Disaster Council from among: The Chief Administrative Officer of the County or the City Manager and/or Chief Administrator of any participating City.

   Two additional persons may be selected from the staff of the Coordinator or from those specified in paragraph F2 above to act as first and second alternates in the absence or inability of the Coordinator to serve.

3. A representative from each member agency who shall be designated as a primary representative to the Council, each member agency shall also designate a first and second alternate if the primary representative is unable to attend.

4. A majority of the Member Agencies constitute a quorum for the transaction of business. In order to act on any item, the following voting formula (a.) and (b.) shall apply:

   a. A majority vote of the members present on the basis of one vote per agency.

   b. A majority of the weighted vote of the members present (when requested).

b.1. For the weighted vote, there shall be a total of 100 votes. Additional votes shall be allowed following the admission of a newly incorporated city as a member agency. The newly incorporated city shall receive one vote under the single vote procedure and one vote under the weighted vote procedure until the next recomputation of the weighted vote, at which time the new city shall receive votes in accordance with the specified SANDAG formula – Section 5 (Section 132351.2 of the Public Utilities Code):

b.1.1. Any agency with 40 percent or more of the total population of the San Diego County region shall be allocated 40 votes.

b.1.2. The remaining Member Agencies votes shall be determined by population using the SANDAG formula – Section 5 (Section 132351.2 of the Public Utilities Code).

c. When a weighted vote is taken on any item requested, or one that requires more than a majority vote of the Unified Disaster Council, it shall also require the supermajority percentage of the weighted vote.

d. Any member agency may request a weighted vote on an agenda item.

e. The weighted vote shall be recomputed every July 1st using the State of California Department of Finance certified population estimates.

G. The Unified Disaster Council meets at least quarterly and upon call of the Chairperson or in his or her absence, or inability to call such a meeting, upon the call of the Coordinator. It is the duty of the Unified Disaster Council and it is empowered:

1. To develop a proposed budget and to recommend a budget and the apportionment thereof to the County and all participating Cities. The County and the participating Cities shall not adopt budgets differing from the budget recommended by the Unified Disaster Council without first consulting with the Unified Disaster Council;

2. To review and approve Operational Area documents which may include emergency mutual aid plans, disaster preparedness plans, agreements, and any ordinances, resolutions, rules and regulations as may be necessary to implement such plans and agreements;

3. To purchase, lease, own, or dispose of property and equipment, and to review and approve contracts to be entered into by the Unified San Diego County Emergency Services Organization pursuant to Section 7 of Part A of this Agreement and to meet all other purposes of this agreement.

H. The Chairperson of the Unified Disaster Council has the following powers and duties:

1. To call regular and special meetings of the Unified Disaster Council.

2. To execute, at the direction of the Unified Disaster Council, contracts, agreements and other instruments necessary to the timely functioning of the Unified San Diego County Emergency Services Organization.

3. To execute contracts, agreements and other instruments necessary to the timely functioning of the Unified San Diego Emergency Services Organization if the Unified Disaster Council is not in session, provided such contracts, agreements, or other instruments, do not conflict with the annual work plan as may be approved by the Unified Disaster Council.

4. To delegate to the Coordinator of Emergency Services or to the Director of the Office of Emergency Services, herein after referred, authority to execute contracts, agreements, and other instruments as specified in paragraphs 2 and 3 above, subject to approval of the Unified Disaster Council.

5. To establish committees and appoint members subject to ratification of the Unified Disaster Council.

6. To represent the Unified Disaster Council, or appoint a Council representative, in all dealings with public or private agencies on emergencies or emergency management issues pertaining to the Emergency Services Organization.

7. To represent the interests of the unincorporated area of the County. The Chairperson may designate a person to represent such interests in his or her absence.

I. The Coordinator of the Unified San Diego County Emergency Services Organization has the following powers and duties:

1. To request the City Council or Councils to proclaim the existence or threatened existence of a local emergency if said Council or Councils are in session or to request such proclamation by the City Manager or other authorized person if the Council or Councils are not in session subject to ratification by the Council or Councils at the earliest practical time.

2. To request the Board of Supervisors to proclaim the existence or threatened existence of a countywide local emergency if the Board of Supervisors is in session or to request such proclamation by the Chief Administrative Officer or other authorized person if the Board of Supervisors is not in session, subject to ratification by the Board of Supervisors at the earliest practical time.

3. To request the Governor of the State of California through the Board of Supervisors or the Council or Councils of the affected City or Cities to proclaim the existence of a state of emergency or state of war emergency when, in the opinion of the Coordinator, the resources of the area or region are inadequate to cope with the emergency.

4. To serve as the Operational Area Coordinator and to coordinate the mutual aid efforts of the parties to this agreement.

5. To receive funds for the Unified San Diego County Emergency Services Organization and to send them to the County Treasurer for deposit pursuant to paragraph E10 above.

6. To authorize the County Auditor/Controller to draw warrants for disbursement of San Diego County Unified Emergency Services Organization funds pursuant to paragraph E 10 above.

J. There is hereby created an Office of, and Director for, Emergency Services. The Office shall be under the direction of the Chief Administrative Officer of the County of San Diego, and the Coordinator of Emergency Services for the Unified San Diego County Emergency Services Organization.

The staff effort directly applicable to County of San Diego functions shall not exceed the level of the financial contribution of that jurisdiction and shall not be inconsistent with the workplan as may be approved by the Unified Disaster Council.

The Director and staff of the Office of Emergency Services shall be responsible for emergency management duties which may include:

1. To prepare, develop, coordinate, and integrate an Operation Area Emergency Plan and to respond to emergencies in accordance with emergency plans;

2. To aid, assist, and advise the County and each City in the preparation and development of emergency plans;

3. To coordinate and assist in the recruitment and training of emergency services personnel;

4. To coordinate and assist in the procurement and inventory of emergency supplies and equipment and in obtaining Federal matching funds and surplus property;

5. To develop, maintain and administrate countywide programs as may be determined by the Unified Disaster Council;

6. To coordinate Operational Area emergency public education programs;

7. To develop, maintain and distribute Operational Area inventories of vital resources;

8. To develop and maintain public warning systems for the San Diego Operational Area;

9. To develop an annual workplan and budget for review and approval by the Unified Disaster Council;

10. To execute and approve all instruments necessary to the day-to-day operation of the Emergency Services Organization as specified in the approved budget, and workplan, and approved changes there to;

11. To provide administration and coordination of County employees functioning as staff to the Unified San Diego County Emergency Services Organization; and

12. To Chair meetings of the Unified Disaster Council in the absence of the designated Chair and Vice-Chair of the Unified Disaster Council.

K. The Unified San Diego County Emergency Services Organization and the Unified Disaster Council are structured herein in accordance with the Emergency Services Ordinance (San Diego County Code of Regulatory Ordinances, Sec. 31.101.) In the event the organizations are altered materially in the Emergency Services Ordinance, any party may offer to the other participating parties amendments to conform the agreement to the Ordinance. All amendments to the Agreement shall be in writing and effective upon execution by all parties.

L. The terms "state of war emergency", "state of emergency", and "local emergency" used herein shall have the same definition as is provided in the California Emergency Services Act, Government Code Section 8558.

M. This agreement shall become effective upon the execution of the agreement by the County Board of Supervisors and by all Cities desiring to become signatories hereto.

Execution of this agreement supersedes the prior Emergency Services Agreement, formerly known as the Civil Defense and Disaster Agreement, and all amendments thereto and also supersedes the Fourth Amended Emergency Services Agreement of 1991.

N. Any of the cities within the County of San Diego which are now, or which may hereafter become incorporated may become a party to this agreement by executing an agreement hereunder and filing such executed agreement with the Coordinator or, in his or her absence, the first or second alternate coordinator.

O. This agreement may be terminated as to any of the parties by written notice given by such party to all the other parties which notice shall be given at least 120 days prior to the commencement of the fiscal year in which the termination is to take effect. For the purposes of such notice a fiscal year is defined as July 1 of a calendar year through June 30 of the next succeeding calendar year.

IN WITNESS WHEREOF, the parties hereto do affix their signatures.

SAN DIEGO COUNTY
UNIFIED DISASTER COUNCIL

Council Approval
Date: 8/2/05

By Pam Slater-Price
Chairman, Unified Disaster Council

CITY OF CARLSBAD

Council Approval
Date: 9/19/05

By Lauri M. Wood

CITY OF CHULA VISTA

Council Approval
Date: March 16, 2004

By Donna Norris

CITY OF CORONADO

Council Approval
Date: May 4, 2004

By Linda K. Hascup, City Clerk

CITY OF DEL MAR

Council Approval
Date: June 7, 2004

By Lorraine Bretche Espinoza

CITY OF EL CAJON

Council Approval
Date: February 24, 2004

By Kathie Rutledge, City Clerk

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY _____
SENIOR DEPUTY

CITY OF ENCINITAS

Council Approval
Date: Feb 16, 2005

By _____

CITY OF ESCONDIDO

Council Approval
Date: 9-12-05

By _____

CITY OF IMPERIAL BEACH

Council Approval
Date: 1/19/05

By _____

CITY OF LA MESA

Council Approval
Date: March 9, 2004

By _____

CITY OF LEMON GROVE

Council Approval
Date: 11-16-04

By _____

CITY OF NATIONAL CITY

Council Approval
Date: 4-20-04

By _____

CITY OF OCEANSIDE

Council Approval
Date: Sept. 1, 2004

By _____

CITY OF POWAY

Council Approval
Date: 9/28/04

By L Diane Shea

CITY OF SAN DIEGO

Council Approval
Date: 05-17-04

By Elizabeth Maland, City Clerk

CITY OF SAN MARCOS

Council Approval
Date: 3-9-2004

By Susan Vasquez

CITY OF SANTEE

Council Approval
Date: April 14, 2004

By [illegible]
City Clerk

CITY OF SOLANA BEACH

Council Approval
Date: March 16, 2004

By [illegible]
Acting City Clerk

CITY OF VISTA

Council Approval
Date: 9/27/05

By Marci Kilian, City Clerk

COUNTY OF SAN DIEGO

Board Approval
Date:

By Thomas J Pastuszka
Clerk of the Board of Supervisors
Thomas J. Pastuszka
Clerk of the Board of Supervisors

Approved and/or authorized by the Board of Supervisors of the County of San Diego
Date 8/2/05 Minute Order No. 7
THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors
By Nancy Ungrana
Deputy Clerk

01-01226

SECTION E

LOCAL EMERGENCY PLANNING COMMITTEE (LEPC)

REGION VI

HAZARDOUS MATERIALS EMERGENCY PLAN

Part One
Basic Plan

FOREWORD

State and Federal legislation requires that the six California Mutual Aid Regions each have a Local Emergency Planning Committee (LEPC) to oversee Hazardous Materials Administering Agencies in their daily efforts to reduce catastrophes' due to hazardous material releases.

The California State Emergency Plan, 1998, outlines a means of stating response intentions to hazardous material's releases. This plan contains response policy and resources as intended to be used by the Region VI LEPC members. We have arranged them in three parts:

1. A statement of LEPC relationship to California Standardized Emergency Management System (SEMS),

2. Policy of intention to respond to hazardous material's incidences, and

2. Available resources.

The organizations listed below contributed to the development of this plan.

California Department of Forestry
- OES Region VI Local Emergency Planning Committee
- OES Region VI staff
- OES Region VI Administering Agencies
- The city of Corona Fire Department
- Inyo County Department of Health Services
- The city of Riverside Fire Department
- San Bernardino County Environmental Health Services
- The City of Banning Fire Dept.
- San Diego County Dept. Of Environmental Health Services
- Riverside County Dept. Of Environmental Health Services
- Imperial County Div. Of Environmental Health Services
- Mono County Sheriff's Dept.
- OES Region VI Emergency Services Agencies
- Inyo County Office of Disaster Services

- Imperial County Emergency Services

Introduction

FUNCTION

This Hazardous Materials Emergency Response Plan was developed by the California Governor's Office of Emergency Services (OES) Region VI Local Emergency Planning Committee (LEPC) pursuant to the Superfund Amendments and Reauthorization Act (SARA) of 1986, Title III as codified in Title 42 of the United States Government Code (U.S.C.), Section 11001 et. Seq. SARA Title III is also known as the "Emergency Planning and Community Right-To-Know Act." The plan addresses the needs of the OES Region VI that includes the six counties of Mono, Inyo, San Bernardino, Riverside, Imperial and San Diego. A Region VI LEPC Committee roster and public meeting information are contained in Appendix A. Appendix B provides a listing of acronyms and definitions of terms contained in this plan.

RELATIONSHIP TO SEMS

The State Emergency Plan establishes the policies, concepts, and general protocols for the implementation of SEMS. The use of SEMS is required by law during multi-agency or multi-jurisdictional emergency response by state agencies. The LEPC response plan is for administrative use by incident commanders working on a multi-agency, multi-operational area problem. The LEPC response plan allows its member entities to use SEMS throughout the four disaster phases: mitigation, preparedness, response and recovery. Region VI LEPC is not a SEMS branch. The LEPC has knowledge of the resources and how their managing companies and organizations wish to have them utilized. Region VI hazardous material's emergency operations are based on existing OES Mutual Aid principals. A recently developed National Incident Management System (NIMS) and its nomenclature are being integrated into SEMS. After the two systems are integrated, SEMS absorbs NIMS, the title SEMS will prevail. In simple terms, the system works according to the following description:

- When an emergency exceeds the city's or county's capability, it makes a request to the Operational Area for assistance.
- The Operational Area will draw on resources from other cities, and may provide its own resources.
- When a local emergency threatens to exceed or exceeds a county wide, operational area wide capability, they request mutual aid assistance through their established SEMS channels. Certain conditions must exist and procedures are followed to activate the Regional and State plan. These are described later in this plan.

Purpose, Scope, and Assumptions

PURPOSE

The Region VI Hazardous Materials Emergency Plan is designed to coordinate resources and arrange for mutual aid support for hazardous materials incidents within the OES Region VI counties of Imperial, Inyo, Mono, Riverside, San Bernardino and San Diego. This plan intends to promote effective coordination to facilitate response capability for serious hazardous materials incidents when one or more Operational Areas (County) in OES Region VI become involved in a situation that overwhelms its resources. The objectives of this plan are to:

- Save lives, reduce injuries, and reduce damages to property and impacts on the environment.
- Describe the role of the LEPC in planning, preparedness, response, recovery, and mitigation actions required to implement this plan.
- Describe conditions for implementation of the plan.
- Identify the responsibilities and tasks of each agency capable of providing assistance and their relationships.
- Establish lines of authority and coordination when the plan is in effect.
- Promote the development of agreements and cooperative arrangements to use the above personnel and resources that will support this plan.

SCOPE

Region VI Hazardous Material Emergency Response Plan is intended as a management tool for use by city, county special district, operational area, regional and volunteer agency professionals. This is a reference. It is meant to reflect policy. Not all of the aspects necessary to implement a particular type of response effort will be included herein.

ASSUMPTIONS

This section is a summary of the planning assumptions that form the basis for developing this regional plan. The plan's effectiveness is dependent on the quality of existing local emergency preparedness because the local agencies are the operational elements of this plan. This plan identifies responsibilities and actions of local, state, and federal agencies. Local Government has the primary responsibility for preparedness and response activities. In every case, the responsibility for and command of an emergency remains with the local jurisdiction. The Region VI Hazardous Materials Emergency Response Plans response capability is based on the assumptions that:

- The affected agencies wish to take all steps necessary to correct the mishap.

- The affected agencies may request the LEPC to provide planning and policy guidance and to designate a representative to carry out the implementation and operation of this plan.

- The LEPC acting as the community emergency coordinator designates the OES Southern Region Administrator as the position with the responsibility for the activation, implementation, and operation of the plan.

- Neither OES nor the LEPC has a stockpile of specific resources, such as skilled workforce, specialized equipment, or supplies for hazardous materials emergencies.

The mechanism for coordinating the Region to provide Mutual Aid support to the requesting jurisdictions is predicated on the assumptions that:

- Each administering agency has a Hazardous Materials Area Plan, including the provisions identified in the Health and Safety Code, Section 25503 (c): and the required plan components identified in Title 19, Chapter 2, Subchapter 3, Sections 2720 through 2728.

- Each administering agency, or their designee, will cooperate and provide available personnel, equipment and supplies, for Mutual Aid assistance to hazardous materials emergencies throughout OES Region VI and the State of California, upon request of the Southern Region Administrator.

- Administering agencies will develop special purpose mutual aid agreements covering the exchange of hazardous material's resources and the reimbursement of such exchanges.

- Requesting jurisdictions are liable for reimbursements for unrecovered costs incurred by the mutual aid provider.

- To maintain a cooperative and effective mutual aid capability, it is important that reimbursement be made in a timely and equitable manner by the requesting jurisdiction.

HAZARD MINIMIZATION

Region VI Hazard Summary

Efforts to reduce hazards in Region VI are taking place through local government, specifically the administering agencies. As discussed in previous sections of this plan, California law requires the development of business plans by facilities, preparation of area plans to respond to hazardous material's incidents and the preparation of Risk Management Plan (RMPs) by certain facilities.

CONCEPT OF OPERATIONS

Operational (County) Area

This plan provides coordination and an overview of regional mutual aid response that takes place during hazardous material incidents, operational (county) area. In general, when a hazardous material's emergency exceeds the capability of a city, the city requests assistance from the county. When the emergency threatens to exceed or exceeds a county's capability, they request assistance from the Region. OES Region VI will look for assistance from other counties in the region and if necessary, will request OES Southern Region to obtain assistance from throughout the state and the federal government. This Regional Plan with the nine Area Plans fulfill the community planning requirements of SARA Title III and provide information upon which the incident commander may act.

This plan should be considered a "living" document that we periodically update to reflect lessons learned from exercises, enhanced response capabilities, and additional details developed through ongoing planning.

This plan builds upon existing local area plans developed by administering agencies according to Chapter 6.95 of the California Health and Safety Code and county Multi-Hazard Functional Plans. Some jurisdictions may have local ordinances that require the development of an emergency plan to deal with hazardous material's incidents before the passage of chapter 6.95. When appropriate, these plans are referenced.

Chapter 6.95 requires that businesses submit "business plans" to their administering agency. These business plans must include: specific inventory information on chemicals handled by the facility, emergency response plans and procedures in case of a hazardous material release or threatened release, and training for all employees. In addition, Chapter 6.95 requires that each administering agency prepare an area plan for emergency response to a hazardous material release or threatened release. The area plan must include the following: procedures and protocols for emergency rescue personnel, pre-emergency planning, notification and coordination, training, public safety and information, supplies and equipment, and incident critique and follow-up.

1. LOCAL PLANS

Local

County of San Bernardino Area Plan (Hazardous Materials Response)(Draft)
City of Victorville Fire Department Area Plan
San Bernardino County Emergency Management Plan
San Diego County Hazardous Materials Area Plan (Draft)
San Diego County Emergency Plan
San Diego County Unified Hazardous Material Incident Contingency Plan
Corona Fire Department Hazardous Materials Incident Area Plan
Riverside City Fire Department Area Plan (Draft of Dec. 1986)
Inyo County Hazardous Materials Response Plan
Mono County Sheriff's Department Hazardous Material Response Plan
Imperial County Hazardous Materials Area Response Plan
Area Plan of Riverside County Health Department regarding Emergency Procedures for Hazardous Materials Releases (Draft Jan., 1987)
California Division of Forestry - Riverside Health Department

Information on any of these plans may be obtained by contacting the authoring agency directly. Addresses and telephone numbers for these agencies are provided in Appendix E.

2. ORGANIZATIONAL ROLES AND RESPONSIBILITIES

The hazardous material's emergency response organization consists of all local government jurisdictions, special districts, and private facilities that can respond. In addition, state and federal agencies who have appropriate statutory authority for such emergencies may be called on. Other state agencies and organizations that have special capabilities, or authorities, may also be called upon if the situation warrants.

It is anticipated that OES Region VI's operational activities for most hazardous materials emergencies will primarily consist of:

- Coordinating existing mutual aid resources located within Region VI.
- Obtaining additional state or federal resources through established procedures.
- Making contact and maintaining communication with appropriate agencies and jurisdictions.
- Acquiring updated information and keeping OES headquarters informed of the situation status.
- Disseminating public information as required.

C: PHASES OF EMERGENCY MANAGEMENT

1. Activation

Levels of Disaster

For planning purposes, the California OES has established three levels of response to peacetime emergencies. These levels are based on the severity of the situation and the availability of local resources.

- Level I: A minor to moderate incident in which local resources are adequate and available. A LOCAL EMERGENCY may or may not be proclaimed.
- Level II: A moderate to a severe emergency in which local resources are not adequate and mutual aid may be required on a regional or even statewide basis. A LOCAL EMERGENCY will be proclaimed and a STATE OF EMERGENCY may be proclaimed.
- Level III: A major disaster in which resources in or near the impacted area are overwhelmed and extensive state and/or federal resources are required. A LOCAL EMERGENCY and STATE OF EMERGENCY will be proclaimed and a Presidential Declaration of an EMERGENCY or MAJOR DISASTER will be requested.

In most circumstances the Regional Hazardous Materials Emergency Plan will become operational when a Level II or Level III disaster affects a county of Region VI. This plan will also function when the disaster occurs in another region and response is requested from within Region VI.

2. Fixed Facilities Incidents

At the onset of a fixed facility incident, the facility emergency coordinator will activate the facility emergency response plan; alert local, state, and federal authorities; and coordinate with local response agencies.

3. Transportation Related Incidents

Highway, rail, pipeline, air, and waterways typically transport hazardous materials. At the onset of a transportation related hazardous materials incident, the law

enforcement agency (city police, sheriff, coast guard, etc.) having primary jurisdiction will coordinate with local, state, and federal agencies as appropriate.

Authorities and References

1. **Legal Authorities**

Federal

Superfund Amendments and Reauthorization Act of 1986, Title III
(P.L. 99-499)
Resource Conservation and Recovery Act of 1976
(P.L. 94-580)
Comprehensive Environmental Response Compensation and Liability Act of 1980
(P.L. 96-510)
Federal Disaster Relief Act of 1974
(P.L. 93-288)

State

California Emergency Services Act, Chapter 7, Division 1, Title 2, California Government
Code (Section 8550 et seq.)
California Health and Safety Code, Chapter 6.95, Division 20
California Master Mutual Aid Agreement

Local

City and County Mutual Aid Agreements as listed in their Area Plans or County Emergency
Plans.

2. **References:**

State

State of California Emergency Plan
California Hazardous Material Incident Contingency Plan
California Fire and Rescue Mutual Aid Plan
California Law Enforcement Mutual Aid Plan
California Coroner's Mutual Aid Plan
Inter-Region (I and VI) Cooperative Agreement for Emergency Medical and Health Disaster Assistance

Part Two
Disaster Operations: Response and Recovery

PLAN ROLES AND RESPONSIBILITIES

A. *Local Government*

Local government has the mandated responsibility for emergency management activities that include preparedness and response activities. In every case, the responsibility for, and command of, an emergency remains with the local jurisdiction.

Administering Agencies have the primary emergency response planning responsibility as described in Chapter 6.95 of the California Health and Safety Code. The official designated by the Administering Agency to direct emergency activities is identified in the administrative section of their area plan. The plan also gives coordination and liaison the region and other authorities.

Local agencies involved in hazardous materials incidents are: *fire departments, law enforcement agencies (sheriff or city police), public works departments, agricultural commissioners, departments of public health (including environmental health), and emergency medical services.*

The local on-scene incident commander is responsible for:

- Evaluating the threat, identifying and implementing appropriate protective actions.
- Receiving and evaluating reports from the site of the emergency and emergency operations staff.
- Requesting assistance.

B. Region VI LEPC

The Region VI LEPC may elect to perform a major disaster coordination role. If so it would be responsible for implementing steps and actions on behalf of the OES Southern Region. Presently the OES Region VI LEPC relies upon the OES Southern Region to set priorities and provide the below functions.

C. *OES Southern Region*

OES Region Administrators are designated the "Community Emergency Coordinators" for their respective regions. Therefore, it is the OES Region Administrator who can make the determinations necessary to implement this plan.

Under direct supervision of the OES Deputy Director, the Southern Region Administrator will:

- Upon notification, contact the impacted local jurisdictions to begin advance response planning as needed; gather facts and estimates of facts to identify the area at risk (including persons, property and the environment); and submit statistical, written, and executive summaries to the State Operations Center.

- Assign an OES liaison to each Incident Command Post and Emergency Operations Center to gather facts and estimates of facts to identify the area at risk (including persons, property and the environment), and submit statistical and written situation updates to the State Operations Center and to OES Region VI LEPC.

- Help determine the requirements of persons in the impacted jurisdiction for food, lodging, clothing, medical attention, financial aid and other necessities of life.

- Schedule, plan and participate in briefing presentations and subsequent activities related to program management of state and federal financial aid programs for the government and private sectors.

- Assist OES Public Information Officer in preparing news releases and brief news media about the emergency and about services and financial assistance available to government and to non-governmental disaster victims.

- Insure that impacted jurisdictions and impacted facilities (through their facility emergency coordinators) comply with the California Emergency Services Act, Chapter 6.95 of the California Health and Safety Code and SARA Title III.

D: *State Government*

The Governor has ultimate responsibility for all state response efforts. On behalf of the Governor and according to the California Emergency Services Act, Section 8587, the Director of the Office of Emergency Services may direct the emergency activities of all state agencies concerning a hazardous material incident.

The State Department of Toxic Substances Control has capabilities for assistance. DTSC has jurisdiction over hazardous wastes and should be contacted for resources such as contractor clean up services, identification and staging and disposal of hazardous wastes released during an emergency. Contact the DTSC Duty Officer System and OES Warning Center. The Federal EPA has similar expertise and capability. DTSC administers the state superfund as it relates to spill clean up and the purchase and deployment of emergency response equipment according to 25351 of the California Health and Safety Code.

The following agencies are available for technical advice or support services when the Plan is implemented (Notification or response can be initiated through the 24-hr OES # 1-800-852-7550). Agency phone numbers are provided in Appendix H.

Office of Emergency Services (OES) is responsible for notification and coordination of state agencies' mutual aid response to hazardous material's incidents. OES coordinate public information and press releases with local, state, and federal agencies.

The Office of Emergency Services is responsible for:

- Coordinating mutual aid resources to the impacted jurisdiction(s).
- Directing state agency support to impacted areas.
- Advising the impacted area of response and recovery programs.
- Coordinating public information and legislative inquiries.

California Highway Patrol will function as the Scene Manager for hazardous material incidents occurring on freeways, state-owned vehicular crossings (toll bridges), and on publicly-owned and maintained roadways within the unincorporated areas of the state,

except within the boundaries of state parks. This is provided for in Section 2453 of the Motor Vehicle code.

The department of Transportation (CALTRANS) has the responsibility for maintenance of all state highways. As a result, CalTrans is responsible for ensuring identification and appropriate removal of all hazardous materials spilled on all highways within its jurisdiction, and restoration of traffic flow on state highways. CalTrans will evaluate and report road conditions, help the California Highway Patrol with traffic control, and restore contaminated highways. CalTrans will pursue reimbursement for repairs and clean up costs incurred because of hazardous material spills.

The department of Fish and Game (DFG) functions as the State Agency Coordinator for off-highway hazardous material's incidents, including oil spills. The DFG will supervise and approve cleanups of incidents affecting the fish and wildlife resources.

The department of Health Services (DOHS) will provide assistance to local public health personnel when a hazardous material incident could affect the public.

The State Department of Health Services is responsible for:

- Rapidly establishing measures to mitigate damage to public health.
- The local health department or the DOHS may establish safety criteria for recovery, reoccupancy, and rehabilitation of contaminated areas. The State may offer recommendations.

Emergency Medical Services Authority (EMSA) Director in coordination with the State Department of Health Services and OES, is responsible for:

- Coordinating the State's emergency medical response.
- Allocating medical resources from outside the affected area.
- Coordinating the evacuation of injured persons to medical facilities using available ground and air transportation.
- Assisting local government to restore essential

emergency medical services.

The Department of Food and Agriculture (CDFA) can provide technical assistance on pesticide-related incidents. The agency should be notified of all incidents involving pesticides or potential contamination of agricultural products.

The Department of Industrial Relations is responsible for investigating accidents at publicly-owned (city, county or state) sites where workers are killed or injured. Accordingly, they will have a role in hazardous and toxic material incidents that have industrial sites as their origin (Sections 142, 147, 6308, and 6309 of Labor Code). In addition, they can provide technical expertise to evaluate health hazards of toxic materials, and advice in safe handling practices.

The Department of Parks and Recreation is responsible for law enforcement within the State park system. The department of Parks and Recreation will act as Scene Manager for hazardous material spills upon a highway within State park boundaries. Additionally, Department of Parks and Recreation will provide assistance to the State Agency Coordinator for other spills occurring within the boundaries of or near State parks.

Public Utilities Commission regulates the transportation of hazardous materials by rail within the state and may be of assistance in a railroad related hazardous materials incident. PUC regulates natural gas lines.

The State Fire Marshall regulates piped hazardous liquids.

California OSHA is responsible for investigating accidents at privately-owned sites. United States OSHA investigates accidents on federally owned properties.

State Military Forces includes the California Army and Air National Guard, the State Military Reserve, and Naval Militia. The Governor will normally commit State Military Force resources in support of the Military Veterans Code, upon determination that:

- emergency conditions exist or are imminent,
- all civil resources reasonablely available have been or will be committed,
- civil authority cannot or will not be able to control the situation and

- Military assistance is required and has been requested as provided in the Military Veterans Code.

State Military Forces, when committed by order of the Governor under the provisions of Section 143 or 146 of the Military Veterans Code, will assist civil authority to discharge lawful responsibilities by performing tasks that include but are not limited to restoration and maintenance of law and order, protection of life and property, removal of debris, medical evacuation and medical treatment, search and rescue, emergency communications, and general logistics support. In a hazardous material emergency, the Military can provide shelter for evacuated residents and security at site perimeters.

Air Resources Board (ARB) can be called upon to provide technical advice and has field analytic monitoring capabilities for airborne contaminants. Notification should be made through the appropriate local board or OES.

State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards have broad powers through statutory and regulatory authority from the California Water Code and Title 23 of the California Code of Regulations, to protect the waters of the State of California from an actual or potential threat due to the use of hazardous materials. The SWRCB can provide advice and technical information, conduct water sampling, monitoring, analysis and assessment.

State agencies and their assignments are summarized in Figure 1.

D. *Federal Government* Federal agency response to a hazardous material incident will be according to the National Oil and Hazardous Substances Contingency Plan. Federal law requires response to oil or hazardous material spills affecting navigable waters or harmful releases to the environment. The scale of the response and the number of agencies participating in the response will be predicated on the nature of the incident.

Environmental Protection Agency (EPA) acts as the federal on-scene coordinator for major incidents and may activate a federal response team (a regional response team) for a major hazardous material incident. EPA also contracts with private consultants to maintain

"technical assistance teams" which are qualified to respond to hazardous material incidents.

Federal Emergency Management Agency (FEMA) provides funding support to state and local governments for disaster relief when a hazardous material incident causes sufficient damage to merit a Presidential Declaration of major disaster.

FED/OSHA must be notified if five or more individuals are hospitalized for more than twenty-four hours, or a fatality occurs.

U.S. Department of Transportation may be of assistance with any hazardous materials incident involving air traffic (Federal Aviation Administration) or rail transportation of hazardous materials (Federal Railway Administration).

U.S. Coast Guard (USCG) acts as the federal on-scene coordinator for incidents involving the State's coastline and navigable waterways or tributaries thereof within the State. The Coast Guard operates the National Response Center. The USCG must be notified when any hazardous material is spilled in waters under USCG jurisdiction. They can provide for the decontamination and clean up of any material that affects the water under their jurisdiction.

5. *Non-governmental Organizations*

Support from various non-governmental organizations may be required to assess properly and handle the situation. Organizations available for providing assistance include:

- American Red Cross (ARC) provides relief for persons affected by disaster including food, clothing, and shelter; supplemental medical and nursing assistance; various family services; and rehabilitation. During disasters, the Red Cross operates independently of, but coordinates with, local government.

- Association of American Railroads (Bureau of Explosives) provides technical assistance.

- CHEMTREC manufacturing chemist association that provides technical information on hazardous materials.
- Civil Air Patrol provides personnel for search and rescue, and for damage assessment.
- Radio Amateur Civil Emergency Service (RACES) is an organized communication unit within the Amateur Radio Public Service Corps and can provide each community with a system of local and national communications assistance in times of emergency.

PUBLIC AWARENESS OF PLAN

The LEPC will use the following means to obtain public review and comment on the final Plan:

- Publication annually in the major newspaper of each county of Region VI that the Regional Hazardous Materials Emergency Response Plan has been submitted and may be reviewed by the Public at specified locations.
- At least two copies of the final Plan available for public review at the main branch of the public library in each region county.
- Copies of the final Plan will be available through the office of Emergency Services Region VI.

Community Right-to-Know Outreach Programs are being developed and are described in Appendix D. This information is designed to educate the public about the types of information that are available, where this information can be obtained, and how to interpret this information. All appropriate requests from the public for "right-to-know" information will be referred to the appropriate administering Agency.

TRAINING FOR PARTICIPANTS

Each local and state agency is responsible for insuring that emergency response personnel are properly trained. The OES has been tasked by AB 2702 to provide hazardous materials training. AB 2702 provides for a single, coordinated, and standardized hazardous substances incident response training and education plans for firefighters and law enforcement, emergency rescue, and environmental health personnel. The LEPC recommends that each administering agency in Region VI follow standardized California and Federal hazardous substances incident response training and education programs to insure a coordinated emergency response capability throughout the Region

and thus avoid inconsistent hazardous substance's emergency response training.

The current training standards are established by:

- Cal OSHA, California Specialized Training Institute (CSTI), State Fire Marshall's Office, Peace Officers Standardized Training and the California Emergency Medical Services Authority (EMSA)

Appendix E lists the addresses and phone numbers for the above agencies.

REVIEWING/UPDATING PLAN

The Region VI LEPC will annually update the resource list that accompanies the plan. The operational plan will be updated as needed and submitted to the OES/SEMS Technical committee for concurrence.

EXERCISING

The objective of any Emergency Management Organization is efficient and timely response during emergencies. The Plan is the first step toward that objective. However, planning alone will not accomplish preparedness. Training and exercises are essential at all levels to make emergency personnel operationally ready.

The accepted method of training staff to manage emergency operations is by creating lifelike scenarios. Exercises allow personnel to become thoroughly familiar with the procedures, facilities and systems that will actually be used in emergencies. Failure to exercise often results in inability to react.

Testing two basic approaches can accomplish a plan; mainly tabletop exercises provide a convenient and low-cost forum for discussion and problem solving. Such exercises will help to decide if adequate emergency policies and procedures exist.

Operations exercises simulate actual emergencies and are accomplished by functional or full scale exercises. They typically involve complete emergency management staffs and are designed not only to exercise procedures, but also to test the readiness of personnel, communications, and facilities. Functional exercises are activities designed to test or evaluate the capability of one or multiple functions, or activities within a function. This type of exercise can take place in some type of operating center and can simulate the use of outside resources. The full scale exercise is intended to evaluate the operational capability of emergency management systems in an interactive manner over a substantial period. This type of exercise includes the mobilization of personnel and resources, the Emergency Operations Center (EOC) is activated and field command posts may be

established.

It is the recommendation of the Region VI LEPC that one tabletop exercises be conducted annually and one full-scale (operational) exercises are conducted biennially.

AFTER ACTION REVIEW

At the close of a plan activation, the LEPC will review the causative circumstances. Any problems identified which can be corrected will be communicated to the responsible agency. The intent of the review is to begin steps to prevent or reduce occurrence.

ANALYZING THE HAZARDS

HAZARDS ANALYSIS

The OES Region VI LEPC's hazards analysis approach for the six counties in this region uses several methods and input sources. The approach includes identification of fixed facilities that handle hazardous materials and transportation routes for hazardous materials including highway, rail, water, air, and pipeline. We took this approach due to the large geographical area (31% of the state) covered by OES Region VI. This regional approach to hazards analysis relies on local agencies to address many details required of a thorough hazard analysis (hazards identification, vulnerability analysis, and risk analysis) through Chapter 6.95 of the Health and Safety Code as discussed below.

Each administering agency in the region is requested to provide the LEPC with a list of facilities and transportation systems in their jurisdiction that may lead to the activation of this plan should an incident occur which involves one of these facilities, sites or transportation routes. These descriptive and qualitative analysis are included for all administering agencies in Region VI and follow this description of how the Region VI LEPC approaches hazard analysis. Chapter 6.95 of the California Health and Safety Code requires that any business that handles regulated substances in specified amounts file a registration form with the administering agency. A regulated substance as referenced in Chapter 6.95 means any chemical designated an extremely hazardous substance listed in Appendix A of Part 355 of Subchapter J of Chapter I of Title 40 of the Code of Federal Regulations. Therefore, each administering agency should have a list of facilities that handle these chemicals.

The administering agency may require that the facility submit a Risk Management Plan (RMP) if it is determined that the handler's operation may present an acutely hazardous material's accident risk. The elements to be included in the RMP are listed below. Further, any new facilities or facilities that undergo major modifications and handle regulated substances will be required to prepare a Risk

Management Plan.

The elements required in the Risk Management Program are similar to those listed in EPS's Technical Guidelines for Hazard Analysis. The required RMP elements include:

- A description of all acutely hazardous materials accidents within the last five years from a request date.
- A report on the nature, age and condition of equipment used to handle regulated substances and schedules for testing and maintenance.
- Design, operating, and maintenance controls that reduce accident risk.
- Description of RMP record-keeping, audit and inspection programs confirming program effectiveness.
- An assessment of the processes, operations, and procedures of the business.

Furthermore, the RMP will be based upon an assessment of the processes, operations, and procedures of the business and must consider all of the following as listed in Chapter 6.95:

- Results of a hazard and operability study that identify the hazards associated with the handling of an regulated material.
- For the hazards identified in the hazard and operable studies, an offsite consequence analysis will be developed assuming a pessimistic air dispersion and other adverse environmental conditions for the most likely hazards.
- Description of risk reduction steps to be taken to address release events and an implementation schedule for improvements.
- Administering agencies may request additional supporting technical information.

Each administering agency has or will develop its own criteria for determining whether a RMP is necessary for a particular facility. These criteria are included in Appendix F as they are developed. It is the opinion of the Region VI LEPC that the list of facilities required

to submit a RMP to their respective administering agency results in the most comprehensive and reliable lists of facilities that can be included in this Regional Plan. Appendix F will also list the facilities required to prepare an RMP and will be updated as new facilities are added.

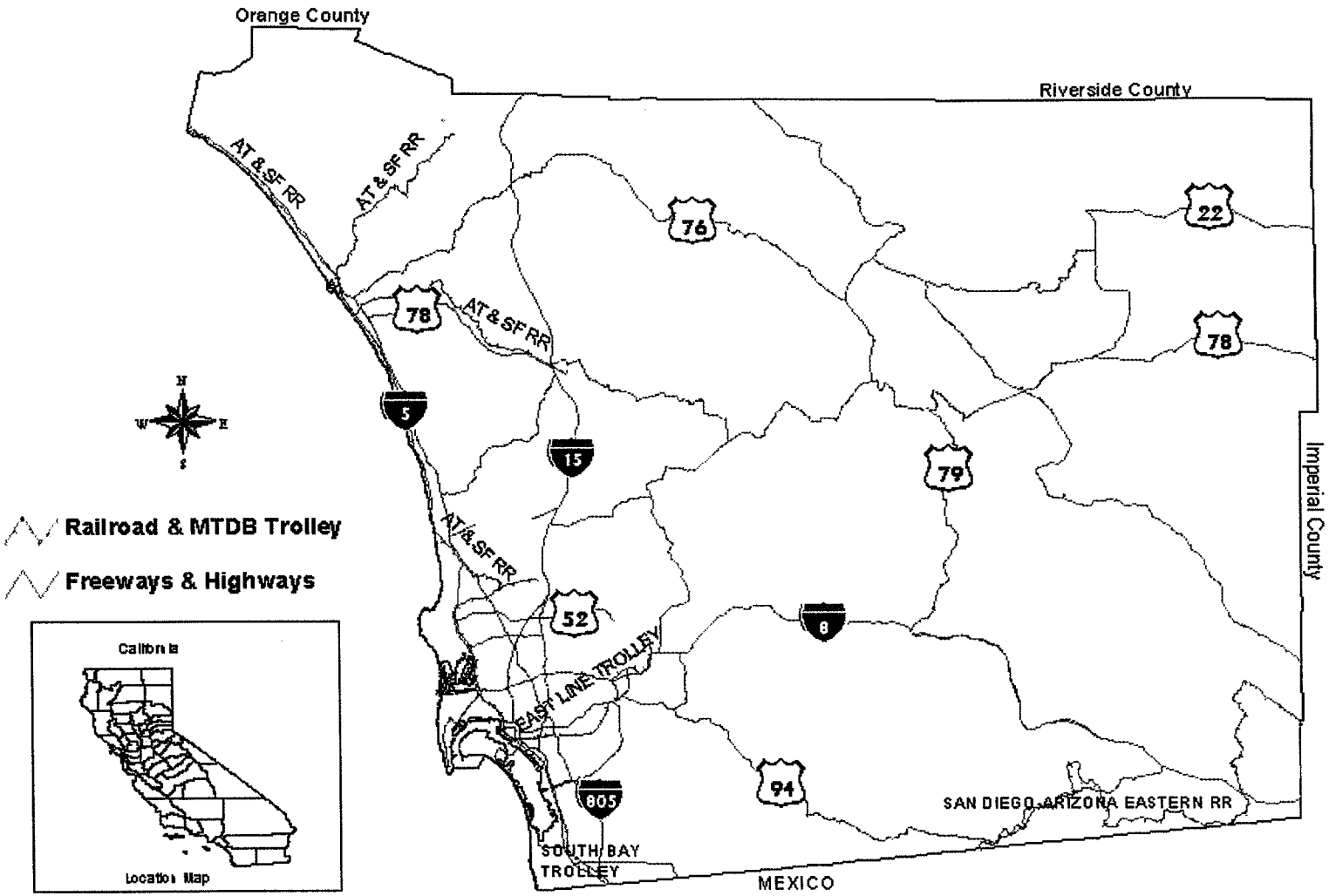
A:\HAZMATPLAN98.wpd
updated 02-03-99 as amended

SECTION F

MAJOR TRANSPORTATION ROUTES WITHIN

SAN DIEGO COUNTY

Major Transportation Corridors of San Diego County



County of San Diego
Department of Environmental Health

SECTION G

PESTICIDE DRIFT PLAN

ROBERT G. ATKINS
AGRICULTURAL COMMISSIONER/
SEALER OF WEIGHTS & MEASURES

SAN MARCOS OFFICE
(760) 752-4700
FAX (760) 752-4703

County of San Diego

DEPARTMENT OF AGRICULTURE, WEIGHTS AND MEASURES
5555 Overland Avenue, Suite 3101, San Diego, CA 92123-1256
Phone: (858) 694-2739 FAX (858) 495-5012
http://www.sdcawm.org

LISA M. LEONDIS
ASSISTANT DIRECTOR

WEIGHTS & MEASURES
(858) 694-2778
FAX (858) 505-6484

Pesticide Drift Protocols

The County of San Diego Agricultural Commissioner's Office (CAC) is responsible for developing response protocols for a pesticide drift exposure incident. Pesticide drift is the movement of a pesticide through the air away from the intended target at the time of application (Appendix A). A pesticide drift exposure incident is a drift incident resulting in exposure to pesticides that pose the possibility of creating acute health effects and/or result in environmental contamination.

There are six protocols detailing how the CAC offers information, guidance, and assistance in response to a pesticide drift exposure incident as follows:

1. *For requesting and providing immediate access to pesticide-specific information necessary to assist emergency medical services personnel in identifying pesticides that may be causing a pesticide drift exposure incident and appropriate treatments.*

The CAC (858-694-8980) will provide immediate access to pesticide specific information necessary to assist emergency medical services personnel in identifying pesticides involved in a drift incident. The information can include pesticide labels, Material Safety Data Sheets (MSDSs), and a list of the agricultural and structural businesses in the affected area. The CAC has compiled a list of 25 most commonly used pesticides with the drift potential (Appendix B).

2. *Delineate specific agency responsibilities and the process for responding to calls, notifying residents, and coordinating evacuation if needed.*

The CAC, the Department of Environmental Health, HAZMAT Division, and the Joint HIRT Team work together in reporting and responding to pesticide drift incidents (Appendix C).

CAC will assist other agencies and the public as needed by employing various means (including the use of Reverse 911) to notify parties impacted by a pesticide drift incident.

3. *Establish emergency shelter procedures and locations to be used in the event evacuation is needed.*

The CAC will assist the County EOC and other agencies in a supportive role in establishing emergency shelters.

4. *Access services in all languages known to be spoken in the affected area.*

The CAC has multiple bilingual employees fluent in Spanish and Tagalog who can communicate with affected parties who do not speak English.

5. *Ensure access to health care within 24 hours of an exposure resulting from a pesticide drift incident and up to a week after the exposure.*

Affected individuals can seek available health care at various hospital emergency departments around San Diego County.

The CAC will coordinate with the County Public Health Services to provided follow-up for exposure victims.

6. *Notify medical providers regarding eligibility for reimbursement.*

The California Department of Pesticide Regulation (DPR) has developed medical reimbursement documents in both Spanish and English, which are available to medical providers and the injured individuals who have been exposed to pesticides in non-occupational drift incidents (Appendix D).

The financial burden to pay for acute medical costs of persons exposed to pesticide drift rests with the responsible party for the incident.

The CAC will investigate pesticide drift incidents according to DPR's Pesticide Drift Incident Response Policy to determine if violations of the pesticide safety laws and regulations have occurred. Substantiated violations will be addressed appropriately according to the Enforcement Response Regulations.

Pesticide Drift

At a Glance

- **If people are ill and it is an emergency, call 911.**
- If you believe that drift has occurred and has harmed people, plants, or the environment, call your County Agricultural Commissioner, who will look into your complaint. The number is on the inside back cover of this booklet. You can also get the number by calling DPR's complaint information line, 1-87PestLine (1-877-378-5463).
- Drift can be noticeable as a cloud of pesticide spray or dust, or can be invisible and odorless.
- If you believe you have been exposed to spray drift and have health-related questions, you should contact the doctor or the Poison Control Center, 1-800-222-1222.

If pesticide drift is making people sick, call 911 right away.

We expect pesticides, when applied, to reach a specific target and remain there. That is the goal of all pesticide applications. Application equipment is built for that purpose. It's the focus of applicator training. When a pesticide product goes where it is not needed or wanted, it may endanger the safety and health of people, injure desirable plants and animals, and affect environmental quality.

Scientists recognize that almost every pesticide application produces some amount of drift off the target area. Not all drift may be harmful or illegal. How much a chemical may drift and whether it is harmful depends on such factors as the formulation of the product, the amount used, the application method, the weather, and – most critically – decisions by the applicator.

Drift can occur from residential and household pesticide applications, too. It can even happen indoors.

Because some drift can occur with any application (and may be in amounts too small to affect people or property), the laws focus on preventing substantial drift.

What is pesticide drift?

Drift is the movement of a pesticide through the air away from the intended target. This drift can be in the form of mist, particles, or vapor (gas). It isn't limited to agricultural activities. Drift can occur when a neighbor sprays pesticides in his garden. It can even occur indoors. Air currents created by heating, cooling, and ventilation systems can pick up and spread pesticides you use in your house.

Pesticide drift was originally thought to occur only when applications were not done properly, and pesticide drifted away from the target, harming people or property. Laws and regulations governing pesticide application were written with this kind of illegal, harmful drift in mind.

As we learned more about how chemicals move through air, we found out that pesticides could drift whether or not those using the pesticides are following the rules. As now used, "drift" refers to any off-site movement of a pesticide – not just to illegal applications. Off-site movement often depends on factors like weather, the application site, or the pesticide used. It can happen when traces of pesticide from one or several legal applications accumulate and remain in the surrounding air. The residues in air are usually (but not always) below the level of health concern.

Measuring and evaluating this kind of low-level off-site movement requires scientific monitoring and study, which we at DPR do in collaboration with Cal/EPA's Air Resources Board and the Office of Environmental Health Hazard Assessment. If we find that drift is harming health, we review the pesticide rules and change them as necessary to protect people. County Agricultural Commissioners enforce these rules.

When does drift occur?

Drift isn't limited to the period during or immediately after an application. It can occur hours or even days later. For ease of explanation in this booklet, we will divide drift into two categories: spray drift, and post-application drift.

"Spray drift" describes drift that occurs during or shortly after the pesticide is applied. It often occurs when wind or application equipment blows the pesticide off the intended site. Spray drift can be in the form of liquid droplets, dust particles (if the pesticide was applied as a dust), or vapor. Vapor can be formed as a liquid or oil dries, or it can be drift of a pesticide that is already a gas (such as a fumigant).

"Post-application drift" occurs after an application is completed. Post-application drift may be the result of an illegal application; for example, an applicator may neglect to follow fumigant application rules. (Fumigant pesticides can escape quickly from application sites and cause problems, resulting in illegal drift.)

On the other hand, post-application drift may also occur with correct applications. Days or even weeks after application, pesticides can evaporate ("volatilize") into a gas. Low levels of pesticides may be carried long distances by air currents.

Vapor drift from a legal pesticide application is sometimes difficult to predict. It depends on factors like what the weather will be even days after the application. Also, some pesticides evaporate more easily than others, as do some different formulations of the same pesticide.

Although some pesticide may move off target in any application, applicators can and must prevent harmful drift.

Why is some drift unavoidable?

The air that surrounds this planet carries vapors and particles long distances. Rain clouds, for example, move with the wind over long distances. Think about how you can smell the disinfectant in your bathroom long after you've cleaned. The same thing happens with pesticides; some amount will drift off target, even though the amount may be very small.

Because pesticides can drift, applicators are legally required to take all possible measures to make sure that any off-site

movement does not reach a level that could harm people or the environment. They must:

- Exercise a high degree of professionalism in making decisions about applications.
- Ensure their equipment and techniques produce a minimum of drift that is below potentially harmful levels.
- Make sure they don't apply pesticides when conditions exist that make drift more likely, for example, when it is too windy.

Because they are gaseous pesticides, fumigants are more volatile and special precautions must be taken to prevent harmful drift, such as these tarps placed over fumigated soil.

Are some pesticides more likely to drift?

Yes. Fumigants are gaseous pesticides used to treat homes, storage bins, and soil before planting. Applicators inject them into soil or release them into buildings. Because they are gases, fumigants move easily through soil and air, and will drift away from where they are applied unless they are confined. Various techniques are used. For example, applicators cover buildings with tarps and seal the edges, to keep the fumigant in the structure. In fields, tarps are placed over the soil to minimize leakage. Over time, the gas slowly releases into the air. Application rules focus on ensuring that the fumigant dissipates slowly so it doesn't build up to harmful levels.

Because they are gases, fumigants are especially volatile. This means they are more likely to drift than other pesticides. Fumigant drift can be a problem during or immediately after application, or days later, particularly if applicators do not pay careful attention to the rules governing fumigant use. That is why fumigants are a major focus of DPR's drift reduction efforts.

Is all drift illegal?

No. Some off-site movement occurs with every application, even if only a few molecules. But to protect people and the environment from harm, California has strict standards concerning drift and many rules limiting applications to minimize drift. Additionally, County Agricultural Commissioners direct significant enforcement activity toward preventing harmful spray drift.

Pesticide laws focus on spray drift that causes harm, or has the potential to do so. The law specifically recognizes that pesticides may drift but says that "substantial" drift is not allowed. The law prohibits applications if there is a reasonable possibility of harm to people or property.

Enforcement specialists from the County Agricultural Commissioner's office look at the facts and circumstances of each incident. If an applicator did not follow the rules, he or she could face fines and other penalties.

Sometimes DPR finds that drift from legal applications poses an unacceptable risk. This kind of drift is not related to whether the application was done correctly but to such things as the chemical properties of the product used, the amount used in an area, and the weather. When we learn about post-application problems resulting from legal uses, we look for the causes of the problem. We then change the rules, as necessary, to keep harmful residues out of the air.

To prevent harmful drift, applicators must evaluate their equipment, the surrounding area, weather conditions, and anything else that may cause problems.

What responsibility do applicators have to prevent drift?

People who are applying pesticides have the primary responsibility for drift management. They must take all reasonable precautions to prevent harmful drift. Spray drift can be illegal if the applicator did not follow the instructions on the label or other requirements, or if the drift causes harm to humans and property, or has the potential to do so.

Preventing harmful exposure to people or property requires that applicators, before using pesticides, evaluate:

- Their equipment.
- The weather.
- The site to be treated.
- The surrounding area to decide the likelihood of harm or damage.

After their evaluation, applicators must use available practices to reduce drift that might otherwise occur. Applicators:

- Must not make an application likely to result in harmful drift.

What are the roles of the Department of Pesticide Regulation and County Agricultural Commissioners regarding drift?

It depends on when the drift occurs in relation to the application, and whether the drift was illegal.

County Agricultural Commissioners:

- Enforce the rules designed to prevent harmful drift.
- Investigate pesticide complaints and take enforcement actions when violations are found.
- Put extra controls on certain pesticides when needed to prevent problems (depending on local conditions; for example, to protect area schools or endangered species habitats).

We at DPR set statewide standards and rules on pesticide use. We also monitor and conduct scientific studies to identify and prevent potentially harmful levels of pesticides in air. When we find problems, we develop additional rules on applications.

- Must not proceed with any action likely to result in the reasonable possibility of contaminating people or interfering with use of neighboring property.

Applicators who do not follow the rules (for example, instructions on the pesticide label or other requirements) will be in violation and may be penalized. Also, if their judgment during an application results in injuries to people, damage to property, or unintended harm to the environment, they will be found in violation and penalized.

What is being done to prevent post-application drift?

Some drift into surrounding air is expected with all pesticide applications. Our job is to make sure that legal applications don't result in pesticide levels in ambient air that pose a risk to health or the environment. If the rules aren't doing that, we change them.

Along with the Air Resources Board, we study pesticides in air next to application sites, as well as in rural communities and cities near agricultural operations. If the studies show that pesticide traces from legal applications accumulate to levels that can harm human health or the environment, we impose extra controls to avoid this harm.

For example, after doing air monitoring, we found that applications of fumigants and certain herbicides could lead to unacceptable post-application drift. Among other changes, we added statewide restrictions on the amount of pesticide that can be applied and acreage that can be treated. We also worked with the County Agricultural Commissioners to develop restrictions that would protect public health while allowing use under specific local conditions.

Application of some pesticides also contributes to the formation of smog, so, along with the Air Resources Board, we are putting controls into place that reduce the contribution of pesticide products to smog.

APPENDIX B

THE MOST COMMONLY USED PESTICIDES WITH DRIFT POTENTIAL (Alphabetical order)

1. Abamectin (Agri-mek 0.15EC, Avid 0.15 EC, Epi-mek-0.15 Miticide)
2. Aluminum Phosphide (Fumitoxin)
3. Bacillus sphaericus (Vectolex CG)
4. Bacillus thuringiensis (Aquabac 200G)
5. Carbaryl (Sevin SL)
6. Carbofuran (Furadan 4F)
7. Chloropicrin (Pic Plus Fumigant)
8. Dazomet (Basamid G)
9. Diazinon (Diazinon AG500 Insecticide)
10. 1,3-Dichloropropene (Telone II)
11. Glyphosate (all brands and formulations)
12. Imidacloprid (Admire Pro Systemic Protectant, Admire 2 Flowable Insecticide, Discus, Marathon II, Merit 2F)
13. Malathion (Malathion 8)
14. Mancozeb (Dithane DF, Duosan WSB WP, Zyban, Protect T/O, Mankocide, Fore, Junction)
15. Methamidophos (Monitor)
16. Methomyl (Lannate)
17. Methyl Bromide (Meth-O-Gas)
18. Methyl Bromide, Chloropicrin (Tricon 57-43)
19. Pyrethrin (Pyrellin E.C.)
20. Phorate: O,O-diethylS-[(ethylthio) methyl] phosphorodithorate (Thimet 20-G-Soil and Systemic Insecticide)
21. Potassium n-methyldithiocarbamate (K-Pam)
22. Sodium methyldithiocarbamate (anhydrous) (Vapam HL)
23. Sulfur (Thiolux Jet)
24. Sulfuryl Fluoride (Master Fume, Vikane, Zythor)
25. Tau-fluvalinate (Mavrik Aquaflow)

APPENDIX C

CONTACT PROCEDURES FOR THE DEPARTMENT OF ENVIRONMENTAL HEALTH'S HAZARDOUS MATERIAL DIVISION & THE DEPARTMENT OF AGRICULTURE, WEIGHTS AND MEASURES' PESTICIDE REGULATION DIVISION FOR PESTICIDE DRIFT INCIDENTS

Procedures to use for HAZMAT to contact the Department of Agriculture, Pesticide Regulation Division, to report incidents that may involve pesticides:

The Department of Environmental Health, Hazardous Material Management Division (HAZMAT) will contact San Diego County Department of Agriculture (AWM) whenever HAZMAT investigates an incident involving pesticides.

- During working hours HAZMAT will call (858) 694-8980 to contact the Supervising Inspector with AWM. AWM staff will take the message if the Supervising Inspectors are not available.

- After working hours or on holidays HAZMAT will call Station M to contact AWM about the incident. Station M will contact AWM personnel using the Emergency Contact list supplied to Station M by AWM. HAZMAT may contact AWM directly using the same list.

AWM requests notification of incidents that may involve pesticides at farms, nurseries, or any other location where pesticides are used; incidents involving pest control companies, fumigations and any incident involving sanitizers or disinfectants such a chlorine, chlorine gas, ammonia at any location including restaurants, hospitals, swimming pools etc.

Procedures for AWM to use to contact HAZMAT to report incidents that may involve Hazardous Materials.

AWM will contact HAZMAT to notify them of any pesticide spill or disposal incident or any other spill, disposal or accident involving any substance that may be hazardous.

- During working hours AWM will notify a Hazardous Material Specialist III with the Hazardous Materials Management Division or call (858) 505-6673 to report a possible incident.

- After working hours or on Holidays AWM will contact Station M at (858) 565-5255.

California Department of Pesticide Regulation

Reimbursing Medical Costs of Persons Injured In Pesticide Incidents

January 2005

New rules require violators to pay certain medical costs

Beginning in 2005, if a pesticide use violation causes illness or injury, violators will be legally responsible to pay certain medical costs of victims.

The new requirement was passed and signed into law in 2004 (Senate Bill 391, Florez). The new law squarely places the financial burden to pay for acute medical costs on those businesses that are responsible for the harm. It also increases penalties the Department of Pesticide Regulation (DPR) and the County Agricultural Commissioners (CACs) can impose for pesticide violations.

The law was prompted by several incidents in which large numbers of persons living near agricultural fields were made ill by pesticide drift. Many were without medical insurance, and did not have the means to pay for medical treatment themselves.

WILL THE NEW LAW CHANGE THE ROLE OF PESTICIDE ENFORCEMENT?

The new law places the financial burden to pay for acute medical costs on those that are responsible for the harm when they violate pesticide rules.

No. The CACs enforce pesticide laws locally and are responsible for investigating pesticide illnesses and incidents in their jurisdictions.

After determining whether pesticide laws were violated, a CAC has a variety of enforcement options including administrative civil penalties. The law also increases the level of civil penalty authority for CACs.

The major emphasis of the law involves the responsibility of the violator to pay for medical costs.

Under the new law, if a pesticide use violation causes illness or injury, the penalty action a CAC issues will also include a statement notifying the violator of his or her responsibility to pay the uncompensated medical costs of those who suffered acute illness or injury and sought immediate medical treatment (Section 12997.5[a] [b], Food and Agricultural Code [FAC]).

There is no obligation, expectation or authority for the CAC to oversee the reimbursement process.

(continued on page 2)

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› ***After the CAC issues a final enforcement order that includes the statement of a violator's responsibility for reimbursing victims, what happens next?***

After the final enforcement order is issued, the violator has 30 days to submit a written plan to DPR, detailing how unreimbursed medical costs will be paid (FAC 12997.5[c]).

› ***Does the CAC determine what the medical costs are, or who qualifies for reimbursement?***

No. Although the county will probably identify most individuals who were made ill, neither the CAC nor DPR are obligated to determine the amount of uncompensated medical costs, or who qualifies for reimbursement.

The violator is ultimately responsible for covering the costs of those affected.

› ***Who gets the reimbursement?***

The violator must compensate the injured individuals or their medical providers, such as ambulance companies, doctors, and hospitals.

› ***What if the CAC doesn't know the names of everyone who was injured? Can people who come forward later have their medical costs reimbursed?***

Determining the scope of the incident and interviewing victims is part of an investigation. By the time an investigation is complete and an enforcement order issued, the CAC usually has the names of those made ill by the illegal application. The CAC can provide a list to the responsible party as soon as possible.

However, under the law, it is not the responsibility of the CAC to identify all persons entitled to medical reimbursement. If additional individuals who suffered acute illness and sought immediate medical care are identified later, they can contact the violator to claim medical reimbursement.

› ***What happens if a violator refuses to reimburse medical costs as required by law?***

Violators who refuse to comply with their legal responsibility are subject to enforcement actions by DPR as needed. Additionally, the violator may be subject to lawsuits by private individuals.

› ***Investigations usually take several weeks. What happens to victims in the meantime?***

The new law strongly encourages the CACs to complete investigations of and take appropriate action on these incidents within 45 days, and DPR will assist the counties in this effort (FAC 12997.5 [g]). Violators would not be responsible under the law to pay for medical costs until they have exhausted due process appeal rights.

(Continued on page 3)

The law defines *acute* illness or injury as "a medical condition that involves a sudden onset of symptoms due to an illness, injury, or other medical problem that required prompt medical attention and that has a limited duration."

(Continued from page 2)

However, the law provides an incentive for persons responsible for the application to pay medical costs **before** an investigation is complete. If the responsible party pays medical costs immediately, the law gives CACs the option of reducing penalties by as much as 50 percent. (FAC 12997.5[g])

However, the amount of a fine reduction does not affect the costs a responsible party must pay in medical expenses.

› *Can victims file a civil suit for damages if they have accepted payment for medical costs?*

Yes. The law says that accepting payment of emergency medical costs does not affect a victim's right to file suit. However, any damages awarded by a court must be reduced by the amount the victim received in medical reimbursement from the violator. (FAC 12997.5[e])

› *Does the new requirement for medical reimbursement apply in all pesticide incidents in which persons are injured?*

No, it applies only to incidents in which pesticides were used **in production of an agricultural commodity**. Furthermore, the medical payment provisions are limited to persons who at the time of exposure were **not** performing work as an employee.

› *What about employees who suffer injuries or illnesses?*

Under pre-existing law, medical costs of employees are already covered by the workers' compensation system. These provisions are unaffected by the new law. Workers who are injured follow the same procedure as before: employers are required to see that they get medical treatment immediately, and costs are covered by the workers' compensation system.

› *The law also increased the maximum penalties. How?*

These provisions of the law are broader than the medical reimbursement requirements. SB 391 authorizes DPR and the CACs to levy a **separate** penalty for **each** person who is injured or made ill by a pesticide violation.

DPR and the CACs had previously been allowed to levy separate penalties only for multiple violations of worker safety regulations—the number of workers injured did not increase the penalty, only the number of code sections violated.

Now, a one person/one violation provision applies to violations involving workers as well as victims in non-occupational settings. DPR and CACs have the authority to multiply the amount of the penalty by the number of victims.

What this means is that DPR and the CACs could levy a penalty of up

(Continued on page 4)

Uncompensated medical costs **are defined in the law as the cost of care not covered by any other program, such as (but not limited to) medical insurance, the Healthy Families Program, or Medi-Cal. The law specifies that medical expense payments shall not be more than 125% of Medi-Cal reimbursement rates.**

(Continued from page 3)

to $5,000 for each person injured or made ill as a result of a violation of any pesticide law or regulation, significantly increasing the potential penalties. (FAC 12996.5[b])

› *What about people injured in past incidents?*

The new requirements went into effect on January 1, 2005. There are no provisions in the law to apply it retroactively. This means the law was not written to apply to people injured before January 2005.

The new law only applies to incidents that occur *after* January 1, 2005, in which violations occur and there are non-occupational injuries.

› *The law also requires development of better response mechanisms for emergency agencies. How will this work?*

The California Environmental Protection Agency (Cal/EPA) is taking the lead on this element of the law. Over the next year, Cal/EPA will work with the County Agricultural Commissioners, local health officers, other local government agencies, and affected community members on standard protocols"— standardized operating procedures — for pesticide incidents. The goal will be to improve procedures used to:

- Request and provide access to pesticide-specific information to help emergency responders identify pesticides involved in a drift incident, as well as appropriate treatments.
- Define specific agency responsibilities and the process for responding to calls, notifying residents, and coordinating evacuation, if needed.
- Establish emergency shelters, if needed.
- Access services in languages known to be spoken in the affected area.
- Ensure access to health care within 24 hours of the exposure and up to a week afterwards.
- Notify medical providers regarding their eligibility for reimbursement under the new law.

› *If I have more questions, whom do I ask?*

Contact DPR's chief legal counsel, Polly Frenkel, 916-324-2666, or via email to pfrenkel@cdpr.ca.gov.

The new requirements went into effect in January 2005. They do not cover persons injured in earlier incidents.

Department of Pesticide Regulation
1001 I Street
P.O. Box 4015
Sacramento, CA 95812

www.cdpr.ca.gov

ABOUT THE DEPARTMENT OF PESTICIDE REGULATION

The California Department of Pesticide Regulation (DPR) protects human health and the environment by regulating pesticide sales and use and by fostering reduced-risk pest management. DPR's strict oversight includes product evaluation and registration, environmental monitoring, residue testing of fresh produce, and local use enforcement through the county agricultural commissioners. DPR is one of six boards and departments within the California Environmental Protection Agency.

El Departamento de Reglamentación de Pesticidas de California

Reembolso de Gastos Médicos a Personas Lesionadas en Incidentes de Pesticidas

Enero 2005

Las nuevas leyes obligan a los infractores a pagar ciertos gastos médicos

Comenzando el 2005, si una infracción por el uso de pesticidas causa enfermedad o lesión, los infractores serán legalmente responsables de cubrir ciertos gastos médicos de las víctimas.

La nueva disposición fue recibida y aprobada como ley en 2004 (Proyecto de Ley 391, Florez). La nueva ley coloca firmemente la carga financiera que se ha de pagar por gastos médicos repentinos y urgentes en aquellos negocios que son responsables del daño. También aumenta las sanciones que el Departamento de Reglamentación de Pesticidas (DPR por sus siglas en inglés) y los Comisionados Agrícolas de los Condados de California (CACs por sus siglas en inglés) pueden imponer por violar las leyes de pesticidas.

La ley fue una reacción a varios incidentes en los que grandes números de personas que viven cerca de campos agrícolas sufrieron enfermedades debido a deriva de pesticidas. Muchos de ellos no tenían seguro médico, ni contaban con los medios para cubrir por sí mismos un tratamiento médico.

La nueva ley coloca la carga financiera que se ha de pagar por gastos médicos repentinos y urgentes en aquéllos que son responsables del daño cuando violan las leyes de pesticidas.

¿CAMBIARÁ LA NUEVA LEY EL PAPEL DEL CUMPLIMIENTO DE LAS LEYES DE PESTICIDAS?

No. Los CACs hacen cumplir las leyes localmente y son responsables de investigar las enfermedades y los incidentes causados por pesticidas en sus jurisdicciones.

Después de determinar si las leyes de pesticidas fueron o no violadas, un CAC tiene una variedad de opciones para hacer cumplir la ley, incluyendo sanciones civiles administrativas. La ley también aumenta el nivel de autoridad a los CACs para sancionar civilmente.

El principal énfasis de la ley compromete la responsabilidad del infractor a cubrir los gastos médicos.

Bajo la nueva ley, si la violación del uso de un pesticida causa enfermedad o lesión, la sanción que un CAC emita también incluirá un comunicado notificando al infractor sobre su responsabilidad de cubrir los gastos médicos no recompensados, a quienes sufrieron una lesión o enfermedad aguda (corto plazo, repentina) y que buscaron tratamiento médico inmediato Sección 12997.5[a] [b], Código de Alimentos y Agricultura [FAC]).

No existe obligación, ni expectativa y autoridad para que el CAC supervise el procedimiento de reembolso.

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› *¿Qué pasa después que el CAC emita una orden final de cumplimiento de ley que incluya un comunicado de la responsabilidad del infractor en hacer el reembolso a las víctimas?*

Después que sea emitida la orden final de cumplimiento de ley, el infractor tiene 30 días para presentar un plan por escrito al DPR, en el cual da los detalles de como serán cubiertos los gastos médicos no recompensados (FAC 12997.5[c]).

› *¿Determina el CAC cuáles son los gastos médicos o quién califica para el reembolso?*

No. Aunque el condado probablemente identifique a la mayoría de los individuos que se enferman, ni el CAC ni el DPR, están obligados a determinar el monto de los gastos médicos no recompensados o de quién califica para el reembolso.

En última instancia, el infractor es responsable de cubrir los gastos de quienes resultaron afectados.

› *¿Quién obtiene el reembolso?*

El infractor tiene que recompensar a los individuos que resultaron lesionados o a los proveedores médicos, tales como las compañías de ambulancias, los doctores y los hospitales.

› *¿Y si el CAC desconoce los nombres de todos los lesionados? ¿La gente que se presenta después, puede recibir el reembolso de sus gastos médicos?*

Parte de la investigación es determinar el alcance del incidente y entrevistar a las víctimas. Para cuando la investigación se haya completado y la orden final de cumplimiento de ley haya sido emitida, generalmente el CAC cuenta con los nombres de quienes se enfermaron debido a la aplicación ilegal. Tan pronto como sea posible, el CAC puede proporcionar una lista a la parte responsable.

Sin embargo, bajo la ley, el CAC no es responsable de identificar a todas las personas que tienen derecho al reembolso médico.

Si más adelante se identifican a otros individuos que sufrieron una enfermedad aguda y que buscaron tratamiento médico inmediato, ellos pueden comunicarse con el infractor para reclamar el reembolso médico.

› *¿Qué pasa si un infractor se niega a reembolsar los gastos médicos como lo exige la ley?*

Los infractores que se nieguen a cumplir con su responsabilidad legal, están sujetos a medidas judiciales por parte del DPR, según se requiera. Además, el infractor puede estar sujeto a demandas legales por parte de particulares.

› *Las investigaciones normalmente tardan varias semanas. ¿Qué les pasa a las víctimas mientras tanto?*

La nueva ley aconseja fuertemente a los CACs a que completen las investigaciones y a tomar las medidas necesarias respecto a estos incidentes dentro de un periodo de 45 días, siendo los condados apoyados en su esfuerzo por el DPR (FAC 12997.5 [g]).

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La ley define enfermedad o lesión *aguda* como "una condición médica que trae consigo la aparición repentina de síntomas debido a una enfermedad, lesión u otro problema médico que requirió una pronta atención médica y que tiene una duración limitada."

(Continúa de la página 2)

Bajo la ley, los infractores no son responsables de cubrir los gastos médicos hasta que se haya agotado el debido proceso de sus derechos de apelación.

Sin embargo, la ley proporciona un incentivo a las personas que cubren los gastos médico **antes** que se termine la investigación. Si la parte responsable cubre los gastos médicos inmediatamente, la ley le da a los CACs la opción de reducir las sanciones hasta en 50 por ciento (FAC 12997.5[g])

No obstante, el monto de la reducción de una multa no afecta los costos que la parte responsable debe cubrir por gastos médicos.

› *¿ Pueden las víctimas entablar una demanda civil por daños si aceptan el pago de los gastos médicos?*

Si. La ley dice que el aceptar el pago de gastos médicos de emergencia no afecta el derecho de la víctima a entablar una demanda. Sin embargo, cualquier daño otorgado por un tribunal deberá reducir el monto (cantidad) que la víctima recibió en el reembolso médico de parte del infractor (FAC 12997.5[e]).

› *¿La nueva disposición para el reembolso médico se aplica a <u>todos</u> los incidentes de pesticidas en los cuales las personas resultan lesionadas?*

No, únicamente se aplica a incidentes en los cuales se usaron pesticidas **en la producción de un producto agrícola**. Además, las disposiciones de pagos médicos están limitadas a personas quienes en el momento de exponerse no estaban trabajando como empleados.

› *¿Qué hay respecto a los empleados que sufren lesiones o enfermedades?*

De acuerdo a la ley preexistente, los gastos médicos de los empleados ya están cubiertos por el sistema de compensación de los trabajadores. Éstas disposiciones no se afectan con la nueva ley. Los trabajadores que resulten lesionados siguen el mismo procedimiento que antes: se requiere que los empleadores vean que los trabajadores obtengan tratamiento médico inmediatamente y que los gastos sean cubiertos por el sistema de compensaciones de los trabajadores.

› *La ley también aumentó las sanciones máximas. ¿Cómo?*

Estas disposiciones de ley son más amplias que los requerimientos del reembolso médico. SB 391 autoriza al DPR y a los CACs a imponer una sanción por **separado** por **cada** persona que se lesione o que se enferme, debido a que se violó la ley de pesticidas.

El DPR y los CACs tenían previamente la autorización para imponer sanciones por separado únicamente por infracciones múltiples de las reglamentaciones de seguridad del trabajador — el número de trabajadores lesionados no aumentaba la sanción, solo el número de secciones del código que se infraccionó.

Ahora, la disposición de una infracción/una persona se aplica a infracciones que involucran a trabajadores como también a víctimas en un marco no laboral. El DPR y los CACs cuentan con la autoridad para multiplicar el monto de la sanción por el número

(Continúa en la página 4)

Los gastos médicos no recompensados son definidos por la ley como el costo de la atención no cubierto por ningún otro programa, tales como (pero no limitado a) el seguro médico, el Programa Familias Sanas o Medi-Cal. La ley especifica que los pagos por gastos médicos no deberán ser más del 125% de las tasas de reembolso de Medi-Cal.

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de las víctimas. Esto quiere decir que el DPR y los CACs pueden imponer una sanción de hasta $5,000 por cada persona lesionada o que se enfermó como resultado de una infracción a la ley o reglamentación de pesticidas, aumentando significativamente las sanciones potenciales. (FAC 12996.5[b])

› *¿Qué hay respecto a la gente que resultó lesionada en incidentes anteriores al 2005?*

Las nuevas disposiciones entraron en efecto el 1º de enero, 2005. No hay disposiciones en la ley para aplicarla retroactivamente. Esto quiere decir que la ley no estaba escrita para aplicarse a la gente lesionada antes de enero 2005. La nueva ley se aplica únicamente a incidentes que ocurran *después* del 1º de enero, 2005, y cuando las infracciones ocurran y no existan lesiones laborales.

› *La ley también requiere un desarrollo de mejores mecanismos de respuesta para las agencias de emergencia. ¿Cómo funcionará esto?*

La Agencia de Protección Ambiental de California (Cal/EPA) va a la vanguardia en este componente de la ley. En el siguiente año, Cal/EPA trabajará con los Comisionados Agrícolas de los Condados de California, los oficiales de la salud locales, otras agencias gubernamentales locales y con los miembros de la comunidad afectada en la norma de protocolos — procedimientos operativos normalizados — para los incidentes de pesticidas. El objetivo será mejorar los procedimientos que se usan para:

- Solicitar y proporcionar acceso a información específica de los pesticidas, para ayudar al personal de rescate a identificar los pesticidas que se encuentran en un incidente causado por una deriva, al igual que sus tratamientos adecuados.
- Definir las responsabilidades específicas de las agencias y el procedimiento para responder a las llamadas, notificar a los residentes y coordinar la evacuación, si fuese necesario.
- Establecer albergues de emergencia, si fuesen necesarios.
- Dar acceso a los servicios en los idiomas que se hablan en el área afectada.
- Garantizar el acceso a la atención médica dentro de las primeras 24 horas y hasta una semana después de haber sido expuesto.
- Notificar a los proveedores médicos respecto a su elegibilidad para recibir reembolso bajo la nueva ley.

› *Si tengo más preguntas, ¿a quién me dirijo?*

Comuníquese con el director de asesoría legal del DPR, Polly Frenkel, 916-324-2666, ó vía correo electrónico a pfrenkel@cdpr.ca.gov.

Las nuevas disposiciones entraron en efecto en enero 2005. No cubren a personas lesionadas en incidentes anteriores.

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Sacramento, CA 95812

www.cdpr.ca.gov

ACERCA DEL DEPARTAMENTO DE REGLAMENTACIÓN DE PESTICIDAS

El Departamento de Reglamentación de Pesticidas (DPR) protege la salud humana y el ambiente reglamentando las ventas de pesticidas y su uso y fomentando el manejo de pestes con riesgo reducido. La administración estricta del DPR incluye la evaluación y registro de producto, monitoreo ambiental, exámenes de residuos en la de frutas y verduras fresca y el uso local del cumplimiento de leyes de pesticidas a través de los comisionados agrícolas del condado. El DPR es uno de seis consejos y departamentos dentro de la Agencia de Protección Ambiental de California.

Appendix A

San Diego County Contingency Plan: Oil Spill Contingency Element

San Diego Area Contingency Plan (ACP) is located: http://homeport.uscg.mil/mycg/portal/ep/home.do?tabId=1&BV_SessionID=@@@@2133733338.1285616221@@@@&BV_EngineID=cccdadelijejfeecfjgcfgfdffhdghj.0 . The site is not secure and it the official site where the latest version of the ACP is posted.

2008 USCG Sector San Diego Area Contingency Plan (ACP) Volume I: Sections 1000- 9700

for the San Diego Area Committee - ACP 6

Emergency Spill Notification Numbers
National Response Center 1-800-424-8802
California Office of Emergency Services 1-800-852-7550

Emergency Spill Notification Numbers

National Response Center
1-800-424-8802

California Office of Emergency Services
1-800-852-7550

APPENDIX B

California Hazardous Materials Incident Reporting System (CHMIRS)

Was a mandatory post-incident reporting system to collect statistical data on hazardous material incidents in California. This data included a description of the disaster, the location, the time and date, the State and local agencies responding, the actions taken by the agencies, and the agency, which had primary authority for responding to the disaster. The written reporting system became obsolete in 2002 but is still contained in the Health and Safety code.

References

California Health and Safety Code, Chapter 6.95, Title 19 CCR, and Government Code Section § 8574.8 (d)

State of California Emergency Management Agency (CalEMA)

Appendix C

HAZARDOUS MATERIALS
BUSINESS PLAN
HM-952

County of San Diego
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6700 FAX (858) 505-6848
www.sdcdeh.org

HAZARDOUS MATERIALS BUSINESS PLAN
Full Version

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F	**1, 2 & 3**	Complete and submit to the Hazardous Materials Division (HMD). Keep copy onsite for review.
O	**4 & 5**	Complete. Keep onsite. *Return to HMD, with forms 1, 2 & 3, for Plan Check submissions.
R	**6, 7 & 8**	Complete. Keep onsite.
M	**9**	Complete and submit to HMD in the event of a Reportable Release. Keep copy onsite.
S	**2 & 10**	Complete and submit with revisions to the inventory, site map, or emergency contacts. Keep copy onsite.

"Environmental and public health through leadership, partnership and science"

HAZARDOUS MATERIALS BUSINESS PLAN

OVERVIEW

CHAPTER 6.95-HEALTH AND SAFETY CODE, DIVISION 20, (AB 2185 & AB 2189)

Hazardous Materials Business Plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Hazardous Materials Business Plans (HMBPs).

The Hazardous Materials Division (HMD) of the Department of Environmental Health (DEH) is the local Certified Unified Program Agency (CUPA) responsible for implementing and enforcing the California state hazardous materials laws and regulations. For more information about the Unified Program and CUPAs, please refer to http://www.calepa.ca.gov/CUPA/.

The HMD periodically conducts inspections to:

- Ensure compliance with existing laws and regulations concerning HMBP requirements.
- Identify existing safety hazards that could cause or contribute to an accidental spill or release.
- Suggest preventive measures designed to minimize the risk of a spill or release of hazardous materials.

When completely implemented, HMBPs will meet EPCRA Tier II Reporting requirements. The Emergency Planning and Community Right-to-Know Act known as EPCRA was enacted by Congress to help local communities protect public health, safety, and the environment from chemical hazards. See http://www.epa.gov/oem/content/epcra/index.htm. Read Subchapter III, Section 11023.

Each business shall prepare an HMBP if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in discloseable quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a Threshold Limit Value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities

After the initial submission, the business must review and recertify the Hazardous Materials Business Plan every year by submitting a completed Certification Statement (HM-953), available at HMD's web site http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html. Only revisions to the inventory, site map, or emergency contacts need to be submitted with the annual Certification Statement. A current copy of the Business Plan must be maintained at the site where the hazardous materials are stored. If any section of the Plan is found to be deficient, it must be amended and submitted to HMD within 30 days. The Plan must also be amended and submitted to the HMD within 30 days for any of the following:

- A 100% or greater increase in quantity of a hazardous material provided in the inventory.
- Any handling of a discloseable quantity of a previously undisclosed hazardous material.
- Deleting a previously disclosed hazardous material.
- Any change in the storage, location or use of hazardous materials, which could affect an emergency response.
- Any change in business name, ownership or address.

Overview (continued)

The Hazardous Materials Business Plan includes three sections:

I. Inventory and Site Map
II. Emergency Response Plan and Owner/Operator Identification
III. Employee Training

The Plan will also serve to better prepare emergency response personnel for handling emergencies which could occur at your facility. The attached format contains the necessary information for the creation of a useful Plan for your facility. When completed, your Plan will become a valuable tool, aiding you and your employees to manage emergencies at your facility.

The pages you will need to complete and submit to this office are included as Section V. Instructions for completing the forms in Section V are detailed in Section I (Inventory), Section II (Emergency Response Plan), and Section III (Employee Training). If you need additional space you may include properly labeled attachments as necessary.

Keep a copy of the Plan for your records. Submit the originals, as applicable, (Section V), to the County of San Diego Department of Environmental Health, Hazardous Materials Division, P. O. Box 129261, San Diego, CA 92112-9261. For additional information or forms, contact your Area Specialist, visit HMD's Web site at http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html, or call the Hazardous Materials Duty Desk at 858-505-6880.

EMERGENCY CONTINGENCY PLANS

If you generate hazardous wastes in any quantity in the State of California, you are required to prepare an emergency contingency plan. The complexity of the contingency plan will depend on the type and extent of the operations at your particular business site. The forms in this packet meet the requirements of an emergency contingency plan.

CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM (CalARP)

On January 31, 1994 the U.S. EPA promulgated a final rule under provisions of the Clean Air Act (CAA) Amendments section 112(r) for the prevention of accidental releases of hazardous substances (i.e., regulated substances). The rule establishes a list of chemicals and threshold quantities that identify facilities subject to subsequent accidental prevention regulations. In October 1996 California passed Senate Bill 1889 (now known as Health & Safety Code, Sections 25531-25534.3). This bill merged in law the federal and state programs for the prevention of accidental releases of regulated toxic and flammable substances.

The incorporation of the federal and state requirements has been designated as the California Accidental Release Prevention Program (CalARP). An owner or operator of a stationary source (non-transportation) with more than a threshold quantity of a regulated substance in a process is required to prepare a risk management program and submit a risk management plan. Regulated substances are toxic chemicals (e.g., chlorine gas and ammonia) and flammable chemicals (e.g., methane and propane) found listed on tables in the regulations at http://www.oes.ca.gov/Operational/OESHome.nsf/PDF/CalARPregs/$file/CalARPregs.pdf If you are subject to CalARP or need additional information please ask for the CalARP Specialist at 858-505-6880.

SPILL REPORTING - REPORTING A RELEASE

Release reporting is required by several state and federal laws. If there is a release at your facility, you are responsible for making an accurate report in a timely manner. For more information on what is a reportable release and how to make an accurate report, see Form HM-951 on Section V of this packet.

BUSINESSES SUBJECT TO HAZARDOUS MATERIALS BUSINESS PLAN REQUIREMENTS

FORMS TO BE COMPLETED, RETAINED ON SITE AND/OR MAILED TO DEH-HMD

This table only lists forms that are required to meet Hazardous Materials Business Plan (HMBP) requirements. Additional forms may be required for your business to be in compliance with other Unified Program regulatory requirements. You can find all Unified Program forms on HMD's web site at: http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html. NOTE: A Unified Program Facility Permit (formerly Health Permit) Application, **HM-906,** is required from all businesses that are subject to HMBP requirements.

HM: Hazardous Materials **HW:** Hazardous Waste **MW**: Medical Waste

Discloseable Quantities: HM, HW or MW in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid or 200 cubic feet of a compressed gas (at STP).

SQG: Small Quantity Generator: Generates greater than or equal to (≥) 220 lbs (100 kg) but less than (<) 2,200 lbs (1000 kg)/month

LQG: Large Quantity Generator: Generates greater than or equal to (≥) 2,200 lbs (1000 kg)/month

FORMS TO COMPLETE	HAZARDOUS MATERIALS BUSINESS PLAN CATEGORIES				
	(1) Discloseable Quantities of HM Only	(2) Discloseable Quantities of HW Only	(3) Discloseable Quantities of MW Only	(4) HW Generators with HM in Discloseable Quantities	
				SQG[1,2]	LQG
Site Map (page 31)	M, R	M, R	M, R	M, R	M, R
Emergency Response Plan (page 33) (or equivalent written information)	R	R	R	R	R
Employee Training Description (page 35) (or equivalent written information)	R	R	R	R	R
Contingency Plan for SQG[2] (page 37) (or equivalent written information)	REQUIRED ONLY FOR SQGs OF HW HANDLING/STORING HAZARDOUS MATERIALS/WASTES BELOW DISCLOSABLE QUANTITIES				
Contingency Plan for LQG (Full HMBP plus pages 39 & 41)	-	LQG Only	-	-	R
HM/HW Training Program	← REQUIRED →				
Training Documentation	Suggested	SQG:Suggested LQG: R	Suggested	Suggested	R

M: Mail a copy to HMD (for brand new submissions, mail site map, emergency response plan and employee training description)
R: Retain copy for inspection **-** : Not Applicable **Suggested**: Not required but highly recommended for documentation

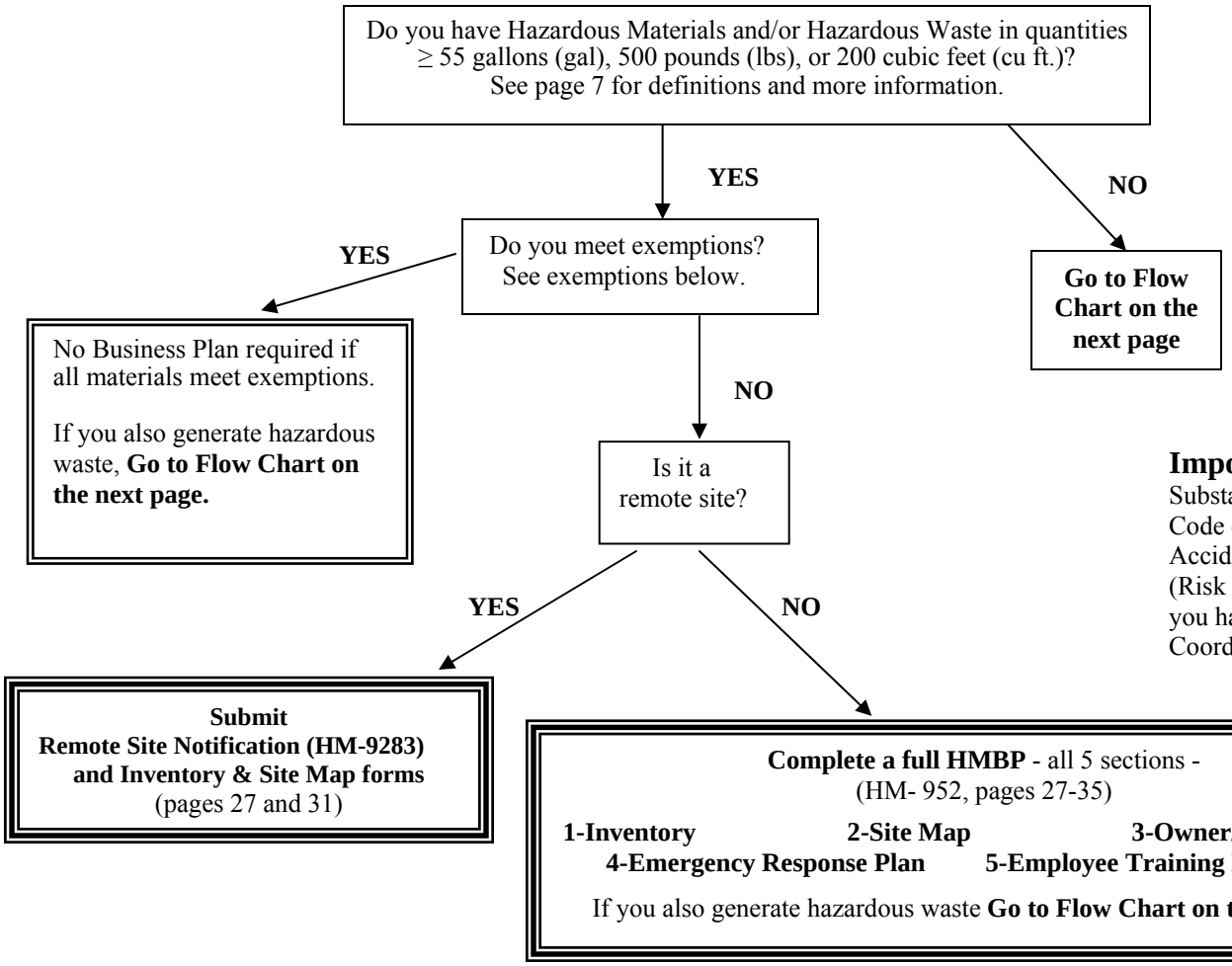
NOTES: [1]**Photo-Waste Only Generators**: If you generate only silver waste from photo processing and the silver is reclaimed, then you only need to complete the Photo Processing Disclosure Form (HM-9281), available at HMD's website. Site map, employee training description & emergency response pages are not required. If you generate 100 kg (220 lb) or more of reclaimed silver waste in any month, you must complete the Contingency Plan for SQG requirements (form HM-9099 A).

[2]**SQGs with Non-Discloseable HMs:** Complete the Contingency Plan for SQG requirements (form HM-9099 A on page 37) only. Site map, employee training description & emergency response pages are not required.

HAZARDOUS MATERIALS BUSINESS PLAN FLOW CHART
Hazardous Materials

This diagram will assist you in determining if you are required to submit a Hazardous Materials Business Plan (HMBP). To determine Contingency Plan requirements for hazardous waste generators, see Hazardous Waste Flow Chart on the next page.

- If you store only Hazardous Materials in discloseable quantities, follow this flow chart.
- If you store Hazardous Materials and generate Hazardous Waste, follow this flow chart first, then go to the Hazardous Waste Flow Chart on the next page.
- If you generate and store only hazardous waste, skip this diagram and go to Hazardous Waste Flow Chart on the next page.



Important Note: Additional Regulated Substances listed in Table 3 of Title 19, California Code of Regulations, are subject to the California Accidental Release Prevention (Cal/ARP) Program (Risk Management Plans). For a copy of this list or if you have questions, please contact the Cal/ARP Coordinator at (858) 505-6842.

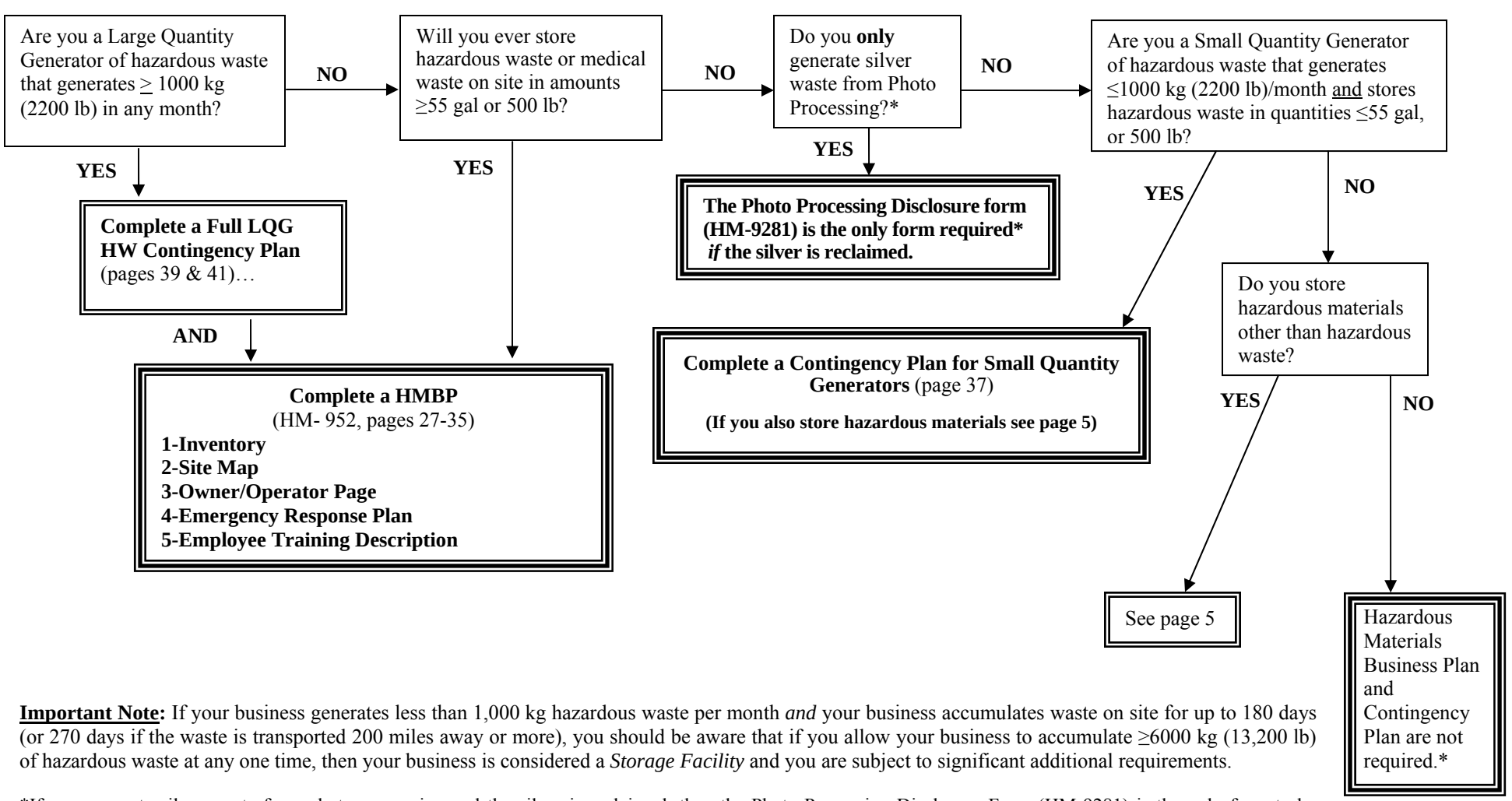
EXEMPTIONS: For additional details on exemptions see page 7.

- **Propane** for heating, cooking, or cooling in quantities up to and including 1000 gal.
- **Carbon Dioxide** for beverages - Cryogenic ≤ 3500 cuft. Non-cryogenic ≤ 6000 cuft
- **Breathing Air & Oxygen** for emergency response by government agencies incl. fire departments
- **Compressed Gases used in Closed Fire Suppression Systems**
- **New Lubricating Oil:** Not to exceed 275 gal total volume and not more than 55 gal of any grade of oil
- **Helium** for inflating balloons in quantities up to and including 1000 cuft.
- **Medical Gases**: ≤1000 cuft- limited to oxygen, nitrogen and nitrous oxide in a *medical office or clinic*
- **Compressed Gases used in Closed Refrigeration Systems**

HAZARDOUS MATERIALS BUSINESS PLAN/CONTINGENCY PLAN FLOW CHART

Hazardous Waste

This diagram will assist you in determining if you are required to complete a Hazardous Materials Business Plan (HMBP) and a Contingency Plan. If you generate and store hazardous waste…



Important Note: If your business generates less than 1,000 kg hazardous waste per month *and* your business accumulates waste on site for up to 180 days (or 270 days if the waste is transported 200 miles away or more), you should be aware that if you allow your business to accumulate ≥6000 kg (13,200 lb) of hazardous waste at any one time, then your business is considered a *Storage Facility* and you are subject to significant additional requirements.

*If you generate silver waste from photo processing and the silver is reclaimed, then the Photo Processing Disclosure Form (HM-9281) is the only form to be submitted. If the silver waste is disposed or not reclaimed, then full hazardous waste requirements must be met. If you generate 100kg (220 lb) or more of reclaimed silver waste in any month, you must complete a Contingency Plan for Small Quantity Generators (page 37).

HAZARDOUS MATERIALS BUSINESS PLAN

I. INVENTORY

DEFINITION: A hazardous material is any material that, because of its quantity, concentration, physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the work place or the environment.

The following hazardous materials and extremely hazardous substances must be listed on the Inventory form:

1. Hazardous Substances or Compounds:

Includes hazardous substances or compounds which are at your establishment at any time in the following quantities:

a. 55 gallons of a liquid
b. 500 pounds of a solid substance
c. 200 cubic feet of a compressed gas (at standard temperature and pressure)

Hazardous substances include hazardous materials and hazardous waste, including hazardous substances in underground storage tanks. Hazardous substances include all chemicals or products for which a manufacturer or producer is required by law to prepare a **Material Safety Data Sheet (MSDS).** A MSDS is a document containing the following information: Chemical Composition, Fire and Explosive, Health Hazard, Reactive, Emergency Procedures, Special Protection and Precautions. A Material Safety Data Sheet can be obtained from a supplier for each particular substance. A hazardous substance also includes materials requiring placard warnings during transportation. Additionally, a hazardous substance includes radioactive materials as referenced in the California Health and Safety Code, Division 20, Chapter 6.95.

2. Extremely Hazardous Substances

List extremely hazardous substances in quantities equal to or greater than the Threshold Planning Quantities, as established in the Federal Register, on April 22, 1987 and as amended on February 25, 1988.

A list of Extremely Hazardous Substances is available upon request from this office or on the EPA website. See 40 CFR part 355.

3. Highly Toxic Compressed Gases (Gases with a Threshold Limit Value of 10 ppm or less).

List in any quantity all gases with Threshold Limit Values-Time Weighted Averages (TLV-TWA) or Threshold Limit Value-Short Term Exposure Limit (TLV-STEL) of 10 parts per million (ppm) or less. Review the Material Safety Data Sheet or contact the distributor of the gases to verify these values. For a list of toxic gases visit HMD's web site and see HM-9243 (Disclosure of Hazardous Materials Information Bulletin) or contact the Hazardous Materials Duty Desk at 858-505-6880.

Do not include the following in your inventory:

Hazardous Materials contained solely in consumer products for direct distribution and use by the general public. These materials are packaged and available to the public in a typical retail outlet (e.g., supermarket, nursery or hardware store).

Tier II Reporting (EPCRA)

The Emergency Planning Community Right to Know Act (EPCRA) requires industry to disclose chemical storage and use including chemical releases. Local government must develop emergency response plans incorporating information provided by industry. For more information about EPCRA see http://www.epa.gov/emergencies/content/epcra/index.htm

EPCRA has two requirements which affect businesses:

I. Businesses must notify releases of chemicals into the environment; the notification for certain chemicals is then published in the Toxic Release Inventory, and
II. Businesses must notify state and local agencies of the quantities and type of toxic chemicals stored.

Businesses that do not comply with EPCRA may be subject to civil penalties and be required to cover costs of litigation and/or environmental remediation actions. EPCRA has four provisions important to businesses:

1. Hazardous Chemical Storage Reporting Requirements (EPCRA):

EPCRA facilities must annually submit emergency contacts and hazardous chemical inventory. This information includes the following:

1. Hazardous chemicals at or above 10,000 pounds,
2. Extremely hazardous substances above 500 pounds or above a defined Threshold Planning Quantity (TPQ) (whichever is less),
3. Chemicals at or above TPQs handled during the last calendar year.

2. Emergency Planning (EPCRA):

The emergency planning section of the law is designed to help communities prepare and respond to emergencies involving hazardous substances. Every community in the United States must be part of a comprehensive plan. Plans are based on information provided in reports from EPCRA facilities**.** In San Diego County, the Hazardous Incident Response Team (HIRT) is an integral part of emergency planning. The team consists of members from the County of San Diego, Department of Environmental Health and City of San Diego, Fire and Rescue Department. The information provided by businesses allows HIRT to respond efficiently to chemical emergencies and protect human health and the environment.

3. Emergency Release Notification (EPCRA):

Facilities must immediately notify the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission (SERC) if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity set in the regulations. This requirement covers the 356 extremely hazardous substances. It also covers the more than 700 hazardous substances subject to the emergency notification requirements under CERCLA Section 103(a) (40 CFR 302.4). Some chemicals are common to both lists. Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of a 911 emergency number, by calling the operator. In California, any release or threatened release requires reporting. For more information on spill reporting visit the California Emergency Management Agency (Cal EMA) Web Site at http://www.oes.ca.gov and see section II of this package.

4. Toxic Release Inventory Reporting (EPCRA):

Toxic Release Inventory Report must be submitted to the Federal Environmental Protection Agency by July 1 each year. This requirement applies to facilities that manufacture, process, or otherwise use a listed toxic chemical above the TPQ, and have 10 or more employees. More information on EPCRA can be found at: http://www.epa.gov/oem/content/lawsregs/epcraover.htm

How to comply with EPCRA Tier II and Hazardous Materials Business Plan reporting:

The California Health and Safety Code, in order to avoid multiple reports to the SERC, LEPC, Fire Departments and the Administering Agency, requires businesses to provide to the Administering Agency an inventory of their chemicals as part of the Hazardous Materials Business Plan (HMBP). The Administering Agency in San Diego County is the Hazardous Materials Division (HMD) of the Department of Environmental Health. The business must provide inventory information if it uses, handles or stores hazardous materials or wastes in quantities equal to or greater than:

- 55 gallons of a liquid
- 500 pounds of a solid substance
- 200 cubic feet of a compressed gas
- A toxic compressed gas in any amount if the Threshold Limit Value is less than 10 parts per million
- Extremely hazardous substances in quantities equal to or greater than the Threshold Planning Quantities

The Health and Safety Code (HSC) also requires that businesses report inventory to the Administering agency on the Unified Program Consolidated forms or equivalent forms from the local Administering Agency. The Business Owner/Operator Identification page (local form HM-9702) and the Hazardous Materials Inventory/Chemical description page (local form HM-9703). Forms must be completed and submitted initially with a complete inventory. Both forms must be submitted with updates within 30 days of changes. Updates are required for:

- Increasing the quantity of a previously disclosed material by one hundred percent or more
- Handling of any previously undisclosed hazardous material subject to the inventory requirements
- Deleting a previously disclosed material.

The business must annually certify to the HMD that the HMBP is current and maintained onsite. If no changes have occurred, the business must send an annual certification indicating that HMBP is current and complete. If there were changes in the HMBP, business must make the changes and submit them with a certification indicating that the HMBP has been reviewed.

Businesses complying with reporting requirements of the Health and Safety Code may be subject to Tier II reporting per Title 40 of the Code of Federal Regulations if the threshold amount of chemicals used reach EPCRA notification requirements. In the State of California, the business is in compliance with EPCRA Tier II reporting requirements if the business has a current permit from the Administering Agency, notifies the Department of changes in its inventory using the forms HM-9702 and HM-9703, and on annual basis certifies that its inventory is current. In San Diego County, the Administrating Agency is the Department of Environmental Health-HMD. The local permit for hazardous materials is a Unified Program Facility permit. All Unified Program Consolidated forms can be found in HMD's web site at www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html and hard copies can be obtained by calling the Hazardous Materials Duty Desk at 858-505-6880.

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COUNTY OF SAN DIEGO CUPA
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6880 FAX (858) 505-6848

____/____/____
Date Submitted

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(One page per material per building or area)

☒ ADD ☐ DELETE ☐ REVISE 200 Page 1 of 1

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3

Joe's Automotive Repair

CHEMICAL LOCATION 201

SEE SITE MAP/PLAN

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202 ☒ YES ☐ NO

FACILITY ID # 3 7 0 0 0 1 2 3 4 5 6[1]

MAP# (optional) 203 *NOT USED*

GRID# (optional) 204 *NOT USED*

I. CHEMICAL INFORMATION

CHEMICAL NAME 205

Ethylene Glycol

TRADE SECRET 206 ☐ YES ☒ NO
If Subject to EPCRA, refer to instructions

COMMON NAME 207

Antifreeze

EHS* 208 ☐ YES ☒ NO

CAS# 209

107-21-1

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

NOT REQUIRED BY SAN DIEGO COUNTY

HAZARDOUS MATERIAL TYPE (Check one item only) 211 ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE

RADIOACTIVE 212 ☐ Yes ☒ No

CURIES 213

PHYSICAL STATE (Check one item only) 214 ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS

LARGEST CONTAINER 215 55

FED HAZARD CATEGORIES (Check all that apply) 216 ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☒ e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT (stored on site) 217	MAXIMUM DAILY AMOUNT (stored on site) 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
30	55		

UNITS* (Check one item only) * If EHS, amount must be in pounds. 221 ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS

DAYS ON SITE: 222 365

STORAGE CONTAINER 223
☐ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☒ d. STEEL DRUM
☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO
☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER
☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON
☐ q. RAIL CAR ☐ r. OTHER

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☐ No 228	229
2 230	231	☐ Yes ☐ No 232	233
3 234	235	☐ Yes ☐ No 236	237
4 238	239	☐ Yes ☐ No 240	241
5 242	243	☐ Yes ☐ No 244	245

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

☐ **CHECK THIS BOX** IF THIS HAZARDOUS MATERIAL IS A TOXIC GAS THAT HAS A THRESHOLD LIMIT VALUE (TLV) ≤ 10 ppm. THIS HAZARDOUS MATERIAL MUST BE INVENTORIED IN ANY QUANTITY.

☐ **CHECK THIS BOX** IF THIS HAZARDOUS MATERIAL IS SUBJECT TO RMP REQUIREMENTS AND/OR CalARP REQUIREMENTS

HAZARDOUS MATERIALS BUSINESS PLAN -INVENTORY

Chemical Description

You must complete a separate Hazardous Materials Inventory - Chemical Description page for each hazardous material (hazardous substances and hazardous waste) that you handle at your facility in aggregate quantities equal to or greater than 500 pounds, 55 gallons, 200 cubic feet of gas (calculated at standard temperature and pressure) or the federal threshold planning quantity for Extremely Hazardous Substances, whichever is less. Also complete a page for each radioactive material handled over quantities for which an emergency plan is required to be adopted pursuant to 10 CFR Parts 30, 40, or 70. The completed inventory should reflect all reportable quantities of hazardous materials at your facility, reported **separately** for each building or outside adjacent area, with **separate** pages for unique occurrences of physical state, storage temperature and storage pressure. (Note: the numbering of the instructions follows the data element numbers that are on the Unified Program Consolidated Form (UPCF) pages. These data element numbers are used for electronic submission and are the same as the numbering used in Division 3, Electronic Submittal of Information. Please number all pages of your submittal. This helps your CUPA or AA identify whether the submittal is complete and if any pages are separated.

1. FACILITY ID NUMBER - Enter your 6 character Permit # from your Unified Program Facility Permit (UPFP). If you do not have one, leave this blank.

3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" - Doing Business As.

200. ADD/DELETE/ REVISE - Indicate if the material is being added to the inventory, deleted from the inventory, or if the information previously submitted is being revised. NOTE: You may choose to leave this blank if you resubmit your entire inventory.

201. CHEMICAL LOCATION – Do not complete this section. Your site map/plan identifies the location of where the hazardous material is stored.

NOTE: This information is not subject to public disclosure pursuant to HSC 25506.

202. CHEMICAL LOCATION CONFIDENTIAL - EPCRA - All businesses which are subject to the Emergency Planning and Community Right to Know Act (EPCRA) must check "Yes" to keep chemical location information confidential. If the business does not wish to keep chemical location information confidential check "No".

203. MAP NUMBER – Do not complete this section. This number is NOT USED. Your site map/plan identifies the location of where the hazardous material is stored.

204. GRID NUMBER - Do not complete this section. Grid coordinates are NOT USED. Your site map/plan identifies the location of where the hazardous material is stored.

205. CHEMICAL NAME - Enter the proper chemical name associated with the Chemical Abstract Service (CAS) number of the hazardous material. This should be the International Union of Pure and Applied Chemistry (IUPAC) name found on the Material Safety Data Sheet (MSDS). NOTE: If the chemical is a mixture, do not complete this field; complete the “COMMON NAME” field instead. For aqueous solutions containing one hazardous component, list the component and the percentage in the “CHEMICAL NAME” and leave the “HAZARDOUS COMPONENT” Section blank.

206. TRADE SECRET - Check "Yes" if the information in this section is declared a trade secret, or "No" if it is not.. State requirement: If yes, and business is not subject to EPCRA, disclosure of the designated trade secret information is bound by HSC §25511.
Federal requirement: If yes, and business is subject to EPCRA, disclosure of the designated Trade Secret information is bound by 40 CFR and the business must submit a "Substantiation to Accompany Claims of Trade Secrecy" form (40 CFR 350.27) to USEPA.

207. COMMON NAME - Enter the common name or trade name of the hazardous material or mixture containing a hazardous material. Each hazardous component of the mixture will be listed below in the “HAZARDOUS COMPONENT” Section.

208. EHS - Check "Yes" if the hazardous material is an Extremely Hazardous Substance (EHS), as defined in 40 CFR, Part 355, Appendix A. If the material is a mixture containing an EHS, leave this section blank and complete the section on hazardous components below.

209. CAS # - Enter the Chemical Abstract Service (CAS) number for the hazardous material. For mixtures, enter the CAS number of the mixture if it has been assigned a number distinct from its components. If the mixture has no CAS number, leave this column blank and report the CAS numbers of the individual hazardous components in the appropriate section below. Use the CAS# format with hyphens and do no use leading zeros. Example: 12345-67-8.

210. FIRE CODE HAZARD CLASSES – This information is not required by San Diego County at this time.

211. HAZARDOUS MATERIAL TYPE - Check the one box that best describes the type of hazardous material: pure, mixture or waste. If waste material, check only that box. If mixture or waste, complete hazardous components section.

212. RADIOACTIVE - Check "Yes" if the hazardous material is radioactive or "No" if it is not.

213. CURIES - If the hazardous material is radioactive, use this area to report the activity in curies. You may use up to nine digits with a floating decimal point to report activity in curies.

214. PHYSICAL STATE - Check the one box that best describes the state in which the hazardous material is handled: solid, liquid or gas.

215. LARGEST CONTAINER - Enter the total capacity of the largest container in which the material is stored. Use the units reported in #221. Enter only the numeric value of the units in this box.

216. FEDERAL HAZARD CATEGORIES - Check all categories that describe the physical and health hazards associated with the hazardous material.

217. AVERAGE DAILY AMOUNT - Calculate the average daily amount of the hazardous material or mixture containing a hazardous material, in each building or adjacent/ outside area. Calculations shall be based on the previous year's inventory of material reported on this page. Total all daily amounts and divide by the number of days the chemical will be on site. If this is a material that has not previously been present at this location, the amount shall be the average daily amount you project to be on hand during the course of the year. OR: the amount can be calculated using the following examples: If you order four drums (220 gallons) of a hazardous material every month and use it within the month, your calculated average daily amount would be half the monthly order which is equal to two drums or 110 gallons. OR: If your hazardous material is stored in a process tank that is 500 gallons and the level never changes, then your average daily amount would be 500 gallons. This amount should be consistent with the units reported in box 221 and should not exceed that of maximum daily amount.

218. MAXIMUM DAILY AMOUNT - Enter the maximum amount of each hazardous material or mixture containing a hazardous material, which is handled in a building or adjacent/outside area at any one time over the course of the year. This amount must contain at a minimum last year's inventory of the material reported on this page, with the reflection of additions, deletions, or revisions projected for the current year. This amount should be consistent with the units reported in box 221.

219. ANNUAL WASTE AMOUNT - If the hazardous material being inventoried is a waste, provide an estimate of the annual amount handled.

220. STATE WASTE CODE - If the hazardous material is a waste, enter the appropriate California 3-digit hazardous waste code as listed on the back of the Uniform Hazardous Waste Manifest.

221. UNITS - Check the unit of measure that is most appropriate for the material being reported on this page: gallons, pounds, cubic feet or tons. NOTE: If the material is a federally defined Extremely Hazardous Substance (EHS), all amounts must be reported in pounds. If material is a mixture containing an EHS, report the units that the material is stored in (gallons, pounds, cubic feet, or tons).

222. DAYS ON SITE - List the total number of days during the year that the material is on site.

223. STORAGE CONTAINER - Check all boxes that describe the type of storage containers in which the hazardous material is stored.
NOTE: If appropriate, you may choose more than one.

224. STORAGE PRESSURE - Check the one box that best describes the pressure at which the hazardous material is stored.

225. STORAGE TEMPERATURE - Check the one box that best describes the temperature at which the hazardous material is stored.

226. HAZARDOUS COMPONENTS 1-5 (% BY WEIGHT) - Enter the percentage weight of the hazardous component in a mixture. If a range of percentages is available, report the highest percentage in that range. (Report for components 2 through 5 in 230, 234, 238, and 242).

227. HAZARDOUS COMPONENTS 1-5 NAME - When reporting a hazardous material that is a mixture, list up to five chemical names of hazardous components in that mixture by percent weight (refer to MSDS or, in the case of trade secrets, refer to manufacturer). All hazardous components in the mixture present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, should be reported. When reporting waste mixtures, mineral and chemical composition should be listed. (Report for components 2 through 5 in 231, 235, 239, and 243). For aqueous solutions containing one component, list the component and the percentage in the “CHEMICAL NAME” and leave the “HAZARDOUS COMPONENT” Section blank.

228. HAZARDOUS COMPONENTS 1-5 EHS - Check "Yes" if the component of the mixture is considered an Extremely Hazardous Substance as defined in 40 CFR, Part 355, or "No" if it is not. (Report for components 2 through 5 in 232, 236, 240, and 244.)

229. HAZARDOUS COMPONENTS 1-5 CAS - List the Chemical Abstract Service (CAS) numbers as related to the hazardous components in the mixture. (Repeat for 2-5.)

246. LOCALLY COLLECTED INFORMATION - Check these boxes if you are subject to the requirements listed.

HAZARDOUS MATERIALS BUSINESS PLAN

I. SITE MAP

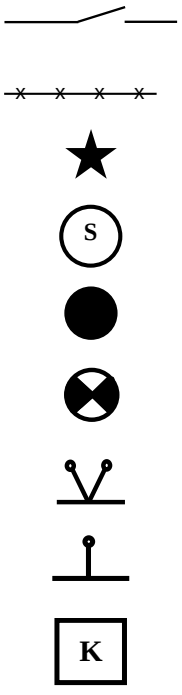
Instructions

SITE MAP LAYOUT - Use 8-1/2 x 11 size ONLY. Use the Standardized Site Map Symbols and the Standardized Hazard Category Symbols only. Provide the following information on your site map:

1. Use 8–1/2 x 11-size paper only. For large facilities, consider using an overall layout on one page, followed by additional 8-1/2 x 11 pages showing individual buildings. (Exceptions to paper size must be approved by the HMD) MAPS ARE NOT REQUIRED TO BE DRAWN TO SCALE.
2. Site Map must be in ink or capable of making legible black and white photocopies. Do not use color coded legends. Do not scale down large documents (such as blue prints) unless the final product is clearly legible.
3. At the top of the Site Map, enter the business name; business site address; zip code; Thomas Brothers map coordinates; date; and Unified Program Facility Permit (UPFP) number.
4. Use a straight-edge, ruler or template to draw the map and symbols. All information (labels, symbols, writing, printing) placed on the site map must be legible and oriented in the same direction as the header.
5. Show structures in plan view from an overhead perspective. Show only the exterior walls of the structures. Indicate all exits and entrances to the structures. (Note: Diagramming of interior walls may be necessary for complex facilities).
6. In the upper left corner, indicate the direction of North by drawing an arrow through the N.
7. For rural areas, include an inset vicinity map of the area.
8. Diagram the streets or roads that provide access to the facility. Include driveway entrances and the nearest cross street.
9. Label internal roads, parking lots, and loading docks.
10. Label adjacent property usages (e.g., school, park, industrial, residential, commercial, vacant, etc.).

USE OF SITE MAP SYMBOLS - Include all applicable site map symbols on site map. Refer to standardized Site Map Symbol as provided in this packet.

1. **Entrances/Exits**: Use this symbol for all exterior doors of structures, including roll-up doors.
2. **Fences**: Use this symbol for fences (e.g. chain link, wood, etc), block walls, or any other barriers that act as a fence. (Note: Include both external and internal fences)
3. **Safe Refuge Area (Evacuation Area, Staging Area)**: Use this symbol to indicate the location that has been designated as the assembly area where plant or business personnel will assemble in the event of an emergency evacuation.
4. **Sewer Drain**: Use this symbol to show all sewer drains, including floor drains to sewer, sewer sumps, etc. (Note: Do not include toilets and sinks).
5. **Fire Hydrants**: Use this symbol to identify all fire hydrants in the vicinity of your facility.
6. **Storm Drain or Culvert**: Use this symbol to indicate the location of all storm drain inlets, culverts, drainage ditches, etc.
7. **F.D. Sprinkler System Connection**: Use this symbol to identify the building/structure fire department sprinkler system connections. (Note: Always located outside of a building accessible to the Fire Department. Do not include landscape sprinkler connections).
8. **F.D. Standpipe Outlet**: Use this symbol to identify the fire department standpipe fire hose connection. (Note: These connections are typically found inside buildings and in stairwells).
9. **Knox Box (F.D. Key Box):** Use this symbol to indicate the location of the Knox Box (a locked box containing keys and/or pertinent information for the Fire Department).



Site Map Instructions (continued)

10. **Underground Storage Tank Capacity**: Use this symbol for underground storage tanks and include the tank capacity within the symbol with the appropriate unit of measure as recorded on the hazardous materials inventory form.

11. **Aboveground Storage Tank and Capacity**: Use the following symbols as indicated and include the tank capacity within the symbol with the appropriate unit of measure as recorded on the hazardous materials inventory form.

    Use this symbol for all plating and process tanks.

    Use these symbols for all other aboveground storage tanks and choose the symbol which most appropriately represents the configuration of the aboveground storage tank.

12. **Electric MAIN Shut Off**: Use this symbol to indicate only the electric **main** shut-off for the entire facility, structure, or building.

13. **Gas MAIN Shut Off**: Use this symbol to indicate only the natural gas **main** shut-off for the entire facility, structure, or building.

14. **Water MAIN Shut Off**: Use this symbol to indicate only the water **main** shut-off for the entire facility, structure, or building.

15. **Annunciator Panel:** Use this symbol to indicate the location of the Annunciator Panel within the facility. An annunciator is equipment which indicates the zone or area of a building from which an alarm has been initiated or the location of an alarm-initiating device and the operational condition of the alarm circuits of the system.

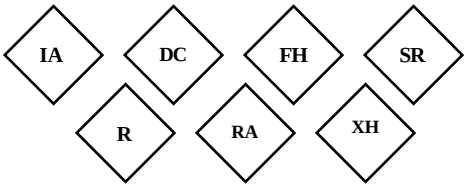
16. **Stairwell - Range of Floors (e.g., B thru 5)**: Use this symbol to indicate stairwells in the interior of a structure or building. Indicate the floor the stairwells begin and end on. For roof access use the abbreviation R. For basement access use the abbreviation B and include the number of basement floors.

17. **Elevator - Range of Floors (e.g., B thru R):** Use this symbol to indicate the elevators in the interior of a structure or building. Indicate the floor the elevator begins and ends on. For roof access use the abbreviation R and include the beginning floor level. For basement access use the abbreviation B and include the number of basement floors.

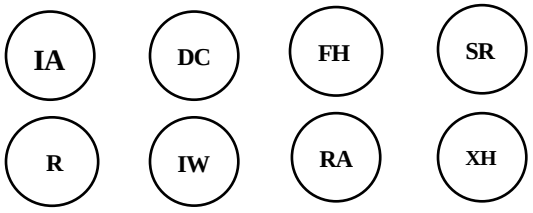
USE OF HAZARD CATEGORY SYMBOLS - Use these symbols to identify the location of hazardous materials stored in inventory quantities and hazardous wastes stored within your facility. (See Map Symbols Page 15).

Use your Material Safety Data Sheet or other available technical resources (i.e., 49 CFR 171.101) to determine the appropriate hazard class for each of your hazardous materials and hazardous wastes you handle on site.

Use the diamond symbol for hazardous materials



Use the circle symbol for hazardous wastes



HINTS FOR A BETTER SITE MAP:

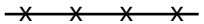
- When drawing streets/intersections, use rounded corners.
- When drawing buildings, use right angles.

HMBP STANDARDIZED SITE MAP SYMBOLS*

SITE MAP SYMBOLS

ENTRANCE/EXIT

FENCE



SAFE REFUGE (Evacuation Area, Staging Area)

SEWER DRAIN

FIRE HYDRANT

STORM DRAIN OR CULVERT

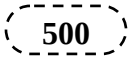
FIRE DEPT. SPRINKLER SYSTEM CONNECTION

F.D. STANDPIPE OUTLET

KNOX BOX (FIRE DEPT. KEY BOX

STORAGE TANKS AND CAPACITY

UNDERGROUND



ABOVE GROUND

MAIN UTILITY SHUT OFFS

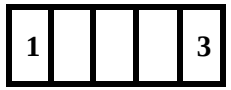
ELECTRICAL

GAS

WATER

ANNUNCIATOR PANEL

STAIRWELL (i.e. 1 thru 3)



ELEVATOR Range of Floors

HAZARDOUS MATERIALS STORAGE/USE AREA SYMBOLS

	MATERIALS	WASTE
IMMEDIATE (ACUTE) HEALTH HAZARD An adverse effect resulting from a short-term exposure to a chemical. Includes highly toxic, toxic, irritant, sensitizers, corrosive chemicals. Examples: cyanide, hydrochloric acid, sodium hydroxide, chlorine gas.	IA	IA
DELAYED (CHRONIC) HEALTH An adverse health effect resulting from long-term exposure to a substance. The effects could be a skin rash, bronchitis, cancer or any other medical condition. Examples include carcinogens such as benzene, formaldehyde, and methylene chloride.	DC	DC
FIRE HAZARD Includes flammable liquids and solids, combustible liquids, pyrophorics and oxidizers. Examples include solvents like acetone and alcohol, solvent based paints, gasoline, naphtha solvent, acetylene gas cylinders, propane gas.	FH	FH
SUDDEN RELEASE OF PRESSURE This category includes explosives, blasting agents and compressed gases. Examples: nitrogen, oxygen, acetylene, helium, carbon dioxide, etc.	SR	SR
REACTIVE This category includes unstable air reactive, water reactive or shock materials. Examples: organic peroxides, fine metal dusts like magnesium, aluminum, phosphorous, cyanides, sulfides and picric acid.	R	R
MEDICAL (INFECTIOUS) WASTE Medical (Infectious) wastes generated in medical, dental and lab settings. Typically needles and syringes in sharps containers, infectious materials in biohazard bags, clinical and microbiological lab specimens and some pharmaceutical waste.	Use the appropriate symbol from this column.	IW
RADIOACTIVES Includes mixed waste and radioactive sources used in labs and industrial settings. Examples include: Scintillation materials, nuclear medicine waste and R & D materials and waste.	RA	RA
EXTREMELY HAZARDOUS Includes materials listed in Appendix A of Part 355 of Subchapter J of Chapter 1 of Title 40 of the Code of Federal Regulations. Examples include: Fluorine gases, Silane, Fumigation gases.	XH	XH

NOTE: **Only use the above listed symbols on the site map**. These symbols have been standardized throughout San Diego County and are meaningful to the local Fire Departments and Public Health Officials that will be responding in the case of an emergency.

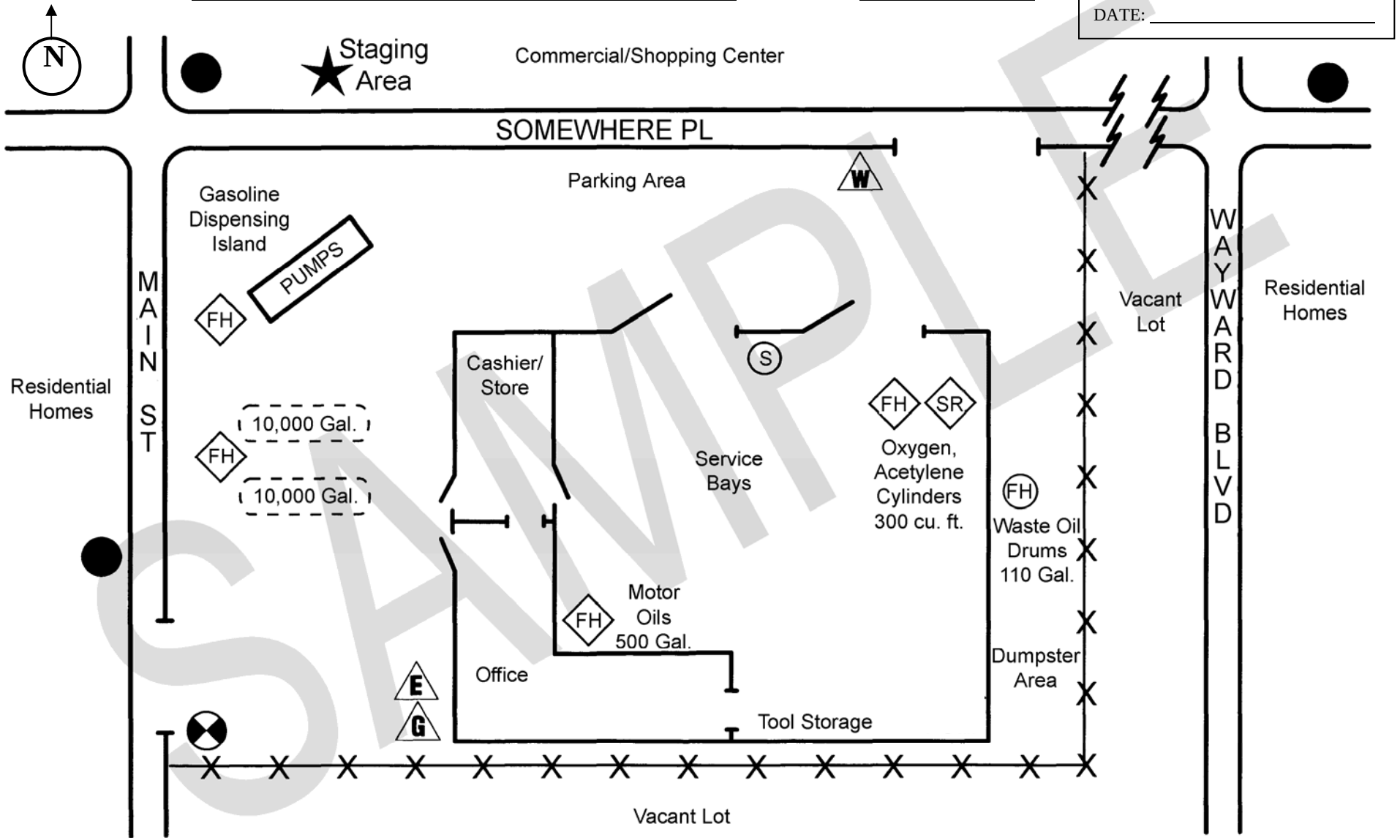
THOMAS BROS COORDINATES 1262-F4 **SITE MAP (Page** 1 **of** 1 **)** **UPFP#** 123456

BUSINESS NAME Joe's Automotive Repair **DATE** 12-15-2009

BUSINESS ADDRESS 1234 Somewhere Pl., Anywhere, CA **ZIP CODE** 91904

OFFICE USE ONLY
REVIEWED BY: _____
DATE: _____

NOT FOR PUBLIC DISCLOSURE



SAMPLE

HAZARDOUS MATERIALS BUSINESS PLAN

II. EMERGENCY RESPONSE PLAN

The Emergency Response Plan must include:

1. Procedures for mitigating a hazardous materials release.
2. Procedures and equipment for minimizing the potential damage of a hazardous materials release.
3. Provisions for immediate notification of the HMD, the California Emergency Management Agency (Cal EMA), and other emergency response personnel as required (e.g., local fire department or paramedics).
4. Evacuation plans and procedures for notification of personnel at the business site.

Instructions for completing the Emergency Response Plan

At the top of the Emergency Response Plan enter the date. Spaces are provided for your Unified Program Facility Permit (UPFP) number, please enter the number if known.

1. Enter business name.
2. Enter business site address.
3. Enter business telephone, including area code. Include a 24-hour number, if applicable.
4. Enter a brief description of product manufactured and/or business operations. For example: electroplating, storage, automotive repair, hospital, medical device manufacturing, etc.
5. Outline procedures for immediate evacuation of the facility. Include the following:
   a. Type of alarm signals (bells, horns, sirens, shouting, etc.) used to start an evacuation and indicate what alarms are used to give the all-clear signal.
   b. If your facility is large or has several buildings, describe any different alarms used for specific parts of the facility.
   c. Evacuation routes, emergency exits, and staging areas. Include alternate routes, exits, and staging areas. Clearly note them on your site map.
   d. Identify areas of the facility where releases could occur or which would require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.
   e. Identify mechanical systems where releases could occur or which would require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.
   f. Indicate if periodic evacuation drills are practiced to help employees become better prepared for emergencies.
6. Enter the name of the person(s) responsible for completing emergency notifications. Identify the local emergency medical assistance appropriate for potential accident scenarios.
7. Describe procedures for the mitigation of a release or threatened release to minimize any potential harm or damage to persons, property, or the environment. Include equipment and resources for use in emergency situations such as communications and containment equipment, automatic monitoring or fire control devices, onsite spill response teams or prearranged contracts with a spill response company. If procedures are different for spills/emergencies of different magnitude, outline the procedures to be followed in each situation, including the criteria for using a particular procedure. Indicate the personnel who will assist emergency response agencies onsite and any information that would assist them when they arrive.

HAZARDOUS MATERIALS BUSINESS PLAN

II. EMERGENCY RESPONSE PLAN

SAMPLE

Date: **MONTH-DAY-YEAR**

UPFP#: **123456**

1. Business Name: **JOE'S AUTOMOTIVE REPAIR**
2. Business Site Address: **1000 FIRST AVENUE, ANY CITY, CA 92000**
3. Business Telephone: **(619) 555-1212** 24-Hour: **(619) 555-1255**
4. Brief description of product manufactured and/or service provided: **AUTO REPAIR**
5. Evacuation Procedures: **Notify employees to evacuate by shouting or fire alarm. Employees will exit through nearest exterior door and meet at staging area located across Fern street in front of grocery store. Emergency Coordinators will be available at staging area to assist Emergency Responders.**
6. Notification Procedures: In the event of a release or threatened release of a hazardous material the following agencies are to be notified.

	Phone #
A. Local Emergency Response Agencies	**911**
B. Hazardous Materials Division (HMD)	**(858) 505-6657 (after hours follow recorded instructions)**
C. California Emergency Management Agency (Cal EMA) (California State Warning Center)	**(916) 845-8911; (800) 852-7550**
D. _____ (Local Hospital or Medical Center)	_____

Name of person(s) responsible for completing notifications **JOE JONES/JOHN SMITH**

Describe notification procedures:

- **Notify agencies and call Clean-Up contractor as needed.**

Contractor's Name/Phone**: Select a Clean-Up contractor and indicate Name & Phone No.**

7. Emergency Procedures: **Main Concerns: Fire Or Chemical Spill.**

FIRE

- Evacuate site if necessary.
- Employees will notify local fire department.
- If safe, employees will shut off power and attempt to control fire using fire extinguishers.

SMALL SPILL

- Chemicals will be picked up with absorbent materials by employees using proper protective clothing and safety equipment.
- Waste will be placed in a labeled waste drum.

LARGE SPILL

- Evacuate site if necessary. Employers will notify fire department.
- If safe, trained employees using proper safety equipment will attempt to prevent spill from entering storm drain or running off-site. Contact Clean-Up contractor to remove spill as necessary.

Reporting the Release of Hazardous Materials

Release reporting is required by several state and federal laws. The Hazardous Materials Division, as the local CUPA, is responsible for ensuring that persons, who are required by law or regulation to report a release, do make an accurate report in a timely manner.

What is a reportable release of hazardous materials?
There are two types of hazardous materials releases that must be reported; a threatened release and a significant release.

A threatened release is not a release. It is a condition that creates a substantial probability of harm and makes it reasonably necessary to take immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment. For example:

- *A hazardous material or waste storage tank becomes unstable, and it begins to tilt off center or lean to one side. The tank is in danger of falling over and releasing its contents to the floor or ground.*
- *A valve on a tank or on piping has corroded and it could fail under normal operating conditions.*

A significant release is subjective. All significant releases must be reported.

Whether a release is significant depends on a variety of factors, including the following: *the amount, the hazardousness of the material or waste, and/or the proximity of sensitive receptors such as schools, nursing homes, etc. See checklist below for examples of reportable and non-reportable releases.*

Reporting a release
After the initial immediate measures have been taken to protect human health and the environment, *report the release at once to the following agencies in accordance with State and Federal law.

1. Call 911 for emergency assistance. This usually results in a fire department response and the local CUPA
2. Call California Emergency Management Agency (Cal EMA), 800-852-7550, 916-845-8991
3. Call the local CUPA at 858-505-6657
4. If a release exceeds the federal reportable quantity (RQ), call the National Response Center (NRC), 800-424-8802.

Mandatory release reports
A release of a reportable quantity (RQ) of a hazardous material must be reported. RQs are listed in the CERCLA "List of Lists". This document is maintained by the United States Environmental Protection Agency and is available at http://www.epa.gov/ceppo/pubs/title3.pdf Another way to determine if a RQ has been exceeded is to use the Department of Energy's RQ calculator, an online tool at http://homer.ornl.gov/rq/
NOTE: Ensure that adequate and appropriate spill containment and mitigation equipment is on hand. It is advisable to periodically check all the hazardous materials stored or used at a facility. Determine the RQs and likely release reporting scenarios in advance. This information could be included in the facility release reporting notification procedures. Flow charts or a list of questions might aid facility personnel in this task.

Determining if a release is reportable. These sample questions can be used to determine if a release is reportable:

- ❑ **Is it a hazardous material?**

This can be any hazardous substance used in your business or any hazardous waste that is generated by your business.

- ❑ **Is there a threatened release?**

Was it necessary to take immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment?

- ❑ **Is there an actual significant release?**
- ❑ **Is the release reportable per federal or state laws and/or regulations?**

Examples of significant releases		**Examples of Releases within a facility's boundaries that that may not be significant:**
❑ *Hazardous material releases that exceed reportable quantities, or* ❑ *Result in an emergency response, or* ❑ *Cause injury, or* ❑ *Go offsite, or* ❑ *Are released into the environment*		❑ *Present no health or safety hazard, or* ❑ *Do not harm environment, or* ❑ *Do not enter atmosphere, or* ❑ *Are completely contained onsite* ❑ *Are completely recovered or removed quickly, or* ❑ *Do not require additional PPE to be worn*

How to follow up after a release:

- Revise the initial release report as necessary to accurately portray the situation.
- Review and revise release response plans if they were not completely effective tools during the emergency.

*For additional hazardous materials release reporting information, review the 2010 California Emergency Management Agency's Hazardous Materials Spill/Release Notification Guidance at: http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Hazardous%20Materials/$file/Spill%20Notification%20Booklet%20Aug-2010.pdf or you may call the Hazardous Materials Duty Desk for San Diego County for a referral to your area's inspection staff at 858-505-6880.

III. EMPLOYEE TRAINING

The Employee Training program must take into consideration the type of work activity, and the level of responsibility of the employees subject to training. The training program should be reasonable and appropriate for the size of the business and the nature of the hazardous materials handled at this site. This training should include the following topics:

1) Procedures for safe handling of hazardous materials, including hazardous wastes
2) Procedures for communication and coordination with emergency response agencies
3) Use of Emergency Response Equipment
4) Emergency Response Plan implementation.

Instructions for completing the Employee Training Description

Complete all sections of the Employee Training Description. For each training topic complete the following training elements:

Persons Trained - List the job classifications or names of the persons that receive training in this topic.

Training Time - State the amount of time spent for this training. Indicate if different employees receive different amounts.

Refresher Frequency - State how often the training is repeated after the initial training (state law requires an annual refresher at a minimum)

Refresher Time - State the amount of time spent for the refresher training.

Training Content - Briefly describe the information covered in the training on this topic. If different information is covered for employees with different job duties, indicate this in your description.

Small Quantity Generator {Less than 1,000 kg (2,200 lb)/month}.
If a business generates hazardous waste, then the business owner/operator must ensure all employees are thoroughly familiar with proper waste handling and emergency procedures. Although the business owner/operator is not required to document or record training sessions related to hazardous waste management, written documentation with signatures of training is strongly recommended. For more information about the types of hazardous waste generators, please see full definition in the General Hazardous Waste Requirements publication HM-9097.

Large Quantity Generator {1,000 kg (2,200 lb)/month} or more.
If a business generates more than 1000 kg (2,200 lbs) of hazardous waste per month, the business owner/operator must have a hazardous waste training program. This program may include classroom training or on the job instructions.

At a minimum, the training program must be designed to ensure facility personnel are able to respond effectively to emergencies by familiarizing them with emergency systems. Furthermore, if applicable, the program shall include procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment; key parameters for automatic waste feed cut-off systems; communications or alarm systems, response to fire or explosion; response to ground water contamination incidents; and shutdown of operations. The program must include job titles, job descriptions, and specific training for each position.

All employees must be trained within six months from the date of employment or assignment to facility or new position at a facility. The business owner/operator must conduct an annual "refresher" training session on hazardous waste management and emergency procedures. All training sessions must be documented and the training records must be kept on-site. These records will be reviewed during compliance inspections.

SAMPLE

Date: **MONTH-DAY-YEAR**
UPFP#: **123456**

III. EMPLOYEE TRAINING

EMPLOYEE TRAINING DESCRIPTION

The following describes the employee training provided for all employees that handle hazardous substances.

1. **Training Topic** - Procedures for handling hazardous materials, including hazardous wastes:

   Persons Trained: MECHANICS

   Training Time: 1-2 HOURS **Refresher Frequency**: ANNUALLY **Refresher Time:** 1 HOUR

   Training Content:

   - Proper management procedures for hazardous materials, including review of material safety data sheets and safety procedures for materials handling.
   - Proper procedures for hazardous waste management, including storage, labeling, and disposal procedures.
   - Record keeping requirements.

2. **Training Topic - Procedures for communication and coordination with emergency response agencies:**

   Persons Trained: EMERGENCY COORDINATOR, ALTERNATE AND OWNER

   Training Time: 1 HOUR **Refresher Frequency**: ANNUALLY Refresher Time**:** 1 HOUR

   Training Content:

   - Emergency response plan communication and notification procedures.
   - Coordination with emergency services: fire department, paramedics and/or clean-up contractor.

3. **Training Topic - Use of emergency response equipment and materials under the business control:**

   Persons Trained: MECHANICS

   Training Time: 1-2 HOURS **Refresher Frequency**: ANNUALLY **Refresher Time:** 1 HOUR

   Training Content:

   - Annual inspection and maintenance of safety equipment (fire extinguishers, eye wash stations, gloves, safety glasses, etc.),
   - Proper use of safety equipment
   - Proper use of spill control equipment (absorbent, hydrophobic mops, etc.)

   For a more detailed list of safety and spill control equipment see page xx (formerly known as 24)

   Training Topic - Emergency Response Plan implementation:

4. **Persons Trained**: ALL EMPLOYEES

   Training Time: 1-2 HOURS **Refresher Frequency**: ANNUALLY **Refresher Time:** 1 HOUR

   Training Content:

   - Location of the emergency response plan
   - Emergency response plan evacuation procedures
   - Location of emergency shut-off switches and specific responsibilities of all employees

A drill encompassing safety and spill equipment operation procedures is used by some employers to train employees and improve their emergency response skills.

IV. HAZARDOUS WASTE CONTINGENCY PLAN REQUIREMENTS
Hazardous Waste Generators Only

Every hazardous waste generator is required to have an emergency contingency plan. A written Hazardous Waste Contingency Plan is a program designed to minimize hazards to human health and the environment from fires, explosions or an unplanned sudden release of a hazardous waste. This program is developed by the facility owner or operator and establishes actions that must be immediately implemented during an emergency situation. The type of contingency plan depends on the amount and types of waste generated at the facility.

Contingency Plan Requirements for Large Quantity Generators

A Large Quantity Generator (LQG) must complete a Contingency Plan as described in Title 22 of the California Code of Regulations, including the following components:

1. Emergency Procedure to be initiated by Emergency Coordinator including Spill Notification
2. A Coordination with Emergency Responses agencies
3. List of Emergency Coordinators
4. List of Emergency Equipment and required Maintenance/Testing
5. Evacuation Plan
6. Current phone of the California Emergency Management Agency (**916) 845-8911; 800-852-7550**
7. A written Employee Training Program, including documentation.

This plan must be maintained at your facility and you must coordinate with the Department of Environmental Health, Hazardous Materials Division (DEH-HMD). During routine inspections this plan will be reviewed. It is your responsibility to ensure that the plan is kept current and that emergency coordinator changes are submitted to DEH-HMD within 30 days. The DEH-HMD works in conjunction with first response agencies integrating the information provided into the area emergency response plan.

Contingency Plan Requirements for Small Quantity Generators

Generator must post the following information next to the telephone: (see form on next page)

1. The name and telephone number of the emergency coordinator;
2. Location of fire extinguishers and spill control material, and, if present, fire alarm; and
3. The telephone number of the fire department, unless the facility has an alarm that goes directly to their local fire department.

Training Requirements: To meet the contingency plan requirements, SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.

Emergency Response Requirements: The Emergency Coordinator or the Emergency Coordinator's designee must respond to any emergencies that arise. The applicable responses are as follows:

1. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;
2. In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil;
3. In the event of a fire, explosion, or other release which could threaten human health outside the facility or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the California Emergency Management Agency (using their 24-hour toll free number (800) 852-7550) and the San Diego County DEH-HMD at (858) 505-6657.

   The report must include the following information:

   - The name, address, and U.S. EPA Identification Number of the generator;
   - Date, time, and type of incident (*e.g.*, spill or fire);
   - Quantity and type of hazardous waste involved in the incident;
   - Extent of injuries, if any; and
   - Estimated quantity and disposition of recovered materials, if any.

SAMPLE CONTINGENCY PLAN FOR SMALL QUANTITY GENERATORS

EMERGENCY PROCEDURES - POST NEAR TELEPHONE

In case of a fire, spill, or other emergency involving hazardous chemicals or waste, do the following:

Major Emergency

- ☑ Evacuate the affected areas per the facility Evacuation Plan
- ☑ **Call 911** and report the emergency to DEH-HMD and Cal EMA
- ☑ Report the emergency to the facility Emergency Coordinator

Minor Emergency

- ☑ Try to control the emergency if you are trained to do so and can do it safely
- ☑ Report the emergency to the facility Emergency Coordinator (EC)

For Release Reporting see Emergency Contacts below

Facility Emergency Coordinators	NAME	WORK PHONE	CELLULAR PHONE/PAGER	HOME PHONE
Primary	John Jones	619-123-4567	619-123-4570	619-123-4573
Alternate #1	Charlie Smith	619-123-4568	619-123-4571	619-123-4574
Alternate #2	Gladys Johnson	619-123-4569	619-123-4572	619-123-4575

EMERGENCY CONTACTS

AGENCY	Telephone Number
Fire Department, Ambulance, Police	**9 1 1**
San Diego County Hazardous Materials Division	(858) 505-6657
California Emergency Management Agency (Cal EMA) **(California State Warning Center)**	(800) 852-7550 (**916) 845-8911**
Local Non-emergency Police/Sheriff/Fire (Optional)	(619) 000-0000
Hazardous Waste Clean-Up Contractor (Optional)	(619) 111-1111
Medical Facility (Optional - Hospital, Urgent Care Clinic, etc.)	(619) 222-2222

EMERGENCY EQUIPMENT

Locations of fire extinguishers, fire alarms (if any), and equipment for controlling chemical spills are shown on the facility site plan posted with this notice. Locations (optional) of electrical gas and water shut-offs, are also shown on the posted facility plan.

NOTE: Ensure that employees are familiar with these emergency and evacuation procedures. An emergency coordinator must be available 24-hours to assist emergency response personnel.

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HAZARDOUS MATERIALS BUSINESS PLAN

SECTION V

FORMS TO COMPLETE

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COUNTY OF SAN DIEGO CUPA
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6880 FAX (858) 505-6848

____/____/____
Date Submitted

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(One page per material per building or area)

☐ADD ☐DELETE ☐REVISE 200 Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3

CHEMICAL LOCATION 201
SEE SITE MAP/PLAN

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202 ☐ YES ☐ NO

FACILITY ID # 3 7 ☐ 0 0 0 ☐ ☐ ☐ ☐ ☐ ☐ ☐ 1

MAP# (optional) 203 *NOT USED*

GRID# (optional) 204 *NOT USED*

I. CHEMICAL INFORMATION

CHEMICAL NAME 205

TRADE SECRET ☐ YES ☐ NO 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207

EHS* ☐ YES ☐ NO 208

CAS# 209

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210
NOT REQUIRED BY SAN DIEGO COUNTY

HAZARDOUS MATERIAL TYPE (Check one item only) 211 ☐ a. PURE ☐ b. MIXTURE ☐ c. WASTE

RADIOACTIVE 212 ☐ Yes ☐ No

CURIES 213

PHYSICAL STATE (Check one item only) 214 ☐ a. SOLID ☐ b. LIQUID ☐ c. GAS

LARGEST CONTAINER 215

FED HAZARD CATEGORIES (Check all that apply) 216 ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT (stored on site) 217

MAXIMUM DAILY AMOUNT (stored on site) 218

ANNUAL WASTE AMOUNT 219

STATE WASTE CODE 220

UNITS* (Check one item only) * If EHS, amount must be in pounds. 221 ☐ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS

DAYS ON SITE: 222

STORAGE CONTAINER 223
☐ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	228 ☐ Yes ☐ No	229
2 230	231	232 ☐ Yes ☐ No	233
3 234	235	236 ☐ Yes ☐ No	237
4 238	239	240 ☐ Yes ☐ No	241
5 242	243	244 ☐ Yes ☐ No	245

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

☐ **CHECK THIS BOX** IF THIS HAZARDOUS MATERIAL IS A TOXIC GAS THAT HAS A THRESHOLD LIMIT VALUE (TLV) ≤ 10 ppm. THIS HAZARDOUS MATERIAL MUST BE INVENTORIED IN ANY QUANTITY.

☐ **CHECK THIS BOX** IF THIS HAZARDOUS MATERIAL IS SUBJECT TO RMP REQUIREMENTS AND/OR CAL/ARP REQUIREMENTS

Hazardous Materials Inventory - Chemical Description

You must complete a separate Hazardous Materials Inventory - Chemical Description page for each hazardous material (hazardous substances and hazardous waste) that you handle at your facility in aggregate quantities equal to or greater than 500 pounds, 55 gallons, 200 cubic feet of gas (calculated at standard temperature and pressure) or the federal threshold planning quantity for Extremely Hazardous Substances, whichever is less. Also complete a page for each radioactive material handled over quantities for which an emergency plan is required to be adopted pursuant to 10 CFR Parts 30, 40, or 70. The completed inventory should reflect all reportable quantities of hazardous materials at your facility, reported **separately** for each building or outside adjacent area, with **separate** pages for unique occurrences of physical state, storage temperature and storage pressure. (Note: the numbering of the instructions follows the data element numbers that are on the Unified Program Consolidated Form (UPCF) pages. These data element numbers are used for electronic submission and are the same as the numbering used in Division 3, Electronic Submittal of Information. Please number all pages of your submittal. This helps your CUPA or AA identify whether the submittal is complete and if any pages are separated.

1. FACILITY ID NUMBER - Enter your 6 character Permit # from your Unified Program Facility Permit (UPFP). If you do not have a Unified Program Facility Permit, leave this blank.
3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" - Doing Business As.
200. ADD/DELETE/ REVISE - Indicate if the material is being added to the inventory, deleted from the inventory, or if the information previously submitted is being revised. NOTE: You may choose to leave this blank if you resubmit your entire inventory.
201. CHEMICAL LOCATION – Do not complete this section. Your site map/plan identifies the location of where the hazardous material is stored. NOTE: This information is not subject to public disclosure pursuant to HSC 25506.
202. CHEMICAL LOCATION CONFIDENTIAL - EPCRA - All businesses which are subject to the Emergency Planning and Community Right to Know Act (EPCRA) must check "Yes" to keep chemical location information confidential. If the business does not wish to keep chemical location information confidential check "No".
203. MAP NUMBER – Do not complete this section. This number is NOT USED. Your site map/plan identifies the location of where the hazardous material is stored.
204. GRID NUMBER - Do not complete this section. Grid coordinates are NOT USED. Your site map/plan identifies the location of where the hazardous material is stored.
205. CHEMICAL NAME - Enter the proper chemical name associated with the Chemical Abstract Service (CAS) number of the hazardous material. This should be the International Union of Pure and Applied Chemistry (IUPAC) name found on the Material Safety Data Sheet (MSDS). NOTE: If the chemical is a mixture, do not complete this field; complete the "COMMON NAME" field instead. For aqueous solutions containing one hazardous component, list the component and the percentage in the "CHEMICAL NAME" and leave the "HAZARDOUS COMPONENT" Section blank.
206. TRADE SECRET - Check "Yes" if the information in this section is declared a trade secret, or "No" if it is not.
    State requirement: If yes, and business is not subject to EPCRA, disclosure of the designated trade secret information is bound by HSC §25511.
    Federal requirement: If yes, and business is subject to EPCRA, disclosure of the designated Trade Secret information is bound by 40 CFR and the business must submit a "Substantiation to Accompany Claims of Trade Secrecy" form (40 CFR 350.27) to USEPA.
207. COMMON NAME - Enter the common name or trade name of the hazardous material or mixture containing a hazardous material. Each hazardous component of the mixture will be listed below in the "HAZARDOUS COMPONENT" Section.
208. EHS - Check "Yes" if the hazardous material is an Extremely Hazardous Substance (EHS), as defined in 40 CFR, Part 355, Appendix A. If the material is a mixture containing an EHS, leave this section blank and complete the section on hazardous components below.
209. CAS # - Enter the Chemical Abstract Service (CAS) number for the hazardous material. For mixtures, enter the CAS number of the mixture if it has been assigned a number distinct from its components. If the mixture has no CAS number, leave this column blank and report the CAS numbers of the individual hazardous components in the appropriate section below. Use the CAS# format with hyphens and do no use leading zeros. Example: 12345-67-8.
210. FIRE CODE HAZARD CLASSES – This information is not required by San Diego County at this time.
211. HAZARDOUS MATERIAL TYPE - Check the one box that best describes the type of hazardous material: pure, mixture or waste. If waste material, check only that box. If mixture or waste, complete hazardous components section.
212. RADIOACTIVE - Check "Yes" if the hazardous material is radioactive or "No" if it is not.
213. CURIES - If the hazardous material is radioactive, use this area to report the activity in curies. You may use up to nine digits with a floating decimal point to report activity in curies.
214. PHYSICAL STATE - Check the one box that best describes the state in which the hazardous material is handled: solid, liquid or gas.
215. LARGEST CONTAINER - Enter the total capacity of the largest container in which the material is stored. Use the units reported in #221. Enter only the numeric value of the units in this box.
216. FEDERAL HAZARD CATEGORIES - Check all categories that describe the physical and health hazards associated with the hazardous material.

PHYSICAL HAZARDS	HEALTH HAZARDS
Fire: Flammable Liquids and Solids, Combustible Liquids, Pyrophorics, Oxidizers Reactive: Unstable Reactive, Organic Peroxides, Water Reactive, Radioactive Pressure Release: Explosives, Compressed Gases, Blasting Agents	Acute Health (Immediate): Highly Toxic, Toxic, Irritants, Sensitizers, Corrosives, other hazardous chemicals with an adverse effect with short term exposure Chronic Health (Delayed): Carcinogens, other hazardous chemicals with an adverse effect with long-term exposure

217. AVERAGE DAILY AMOUNT - Calculate the average daily amount of the hazardous material or mixture containing a hazardous material, in each building or adjacent/ outside area. Calculations shall be based on the previous year's inventory of material reported on this page. Total all daily amounts and divide by the number of days the chemical will be on site. If this is a material that has not previously been present at this location, the amount shall be the average daily amount you project to be on hand during the course of the year. OR: the amount can be calculated using the following examples: If you order four drums (220 gallons) of a hazardous material every month and use it within the month, your calculated average daily amount would be half the monthly order which is equal to two drums or 110 gallons. OR: If your hazardous material is stored in a process tank that is 500 gallons and the level never changes, then your average daily amount would be 500 gallons. This amount should be consistent with the units reported in box 221 and should not exceed that of maximum daily amount.
218. MAXIMUM DAILY AMOUNT - Enter the maximum amount of each hazardous material or mixture containing a hazardous material, which is handled in a building or adjacent/outside area at any one time over the course of the year. This amount must contain at a minimum last year's inventory of the material reported on this page, with the reflection of additions, deletions, or revisions projected for the current year. This amount should be consistent with the units reported in box 221.
219. ANNUAL WASTE AMOUNT - If the hazardous material being inventoried is a waste, provide an estimate of the annual amount handled.
220. STATE WASTE CODE - If the hazardous material is a waste, enter the appropriate California 3-digit hazardous waste code as listed on the back of the Uniform Hazardous Waste Manifest.
221. UNITS - Check the unit of measure that is most appropriate for the material being reported on this page: gallons, pounds, cubic feet or tons. NOTE: If the material is a federally defined Extremely Hazardous Substance (EHS), all amounts must be reported in pounds. If material is a mixture containing an EHS, report the units that the material is stored in (gallons, pounds, cubic feet, or tons).
222. DAYS ON SITE - List the total number of days during the year that the material is on site.
223. STORAGE CONTAINER - Check all boxes that describe the type of storage containers in which the hazardous material is stored. NOTE: If appropriate, you may choose more than one.
224. STORAGE PRESSURE - Check the one box that best describes the pressure at which the hazardous material is stored.
225. STORAGE TEMPERATURE - Check the one box that best describes the temperature at which the hazardous material is stored.
226. HAZARDOUS COMPONENTS 1-5 (% BY WEIGHT) - Enter the percentage weight of the hazardous component in a mixture. If a range of percentages is available, report the highest percentage in that range. (Report for components 2 through 5 in 230, 234, 238, and 242.)
227. HAZARDOUS COMPONENTS 1-5 NAME - When reporting a hazardous material that is a mixture, list up to five chemical names of hazardous components in that mixture by percent weight (refer to MSDS or, in the case of trade secrets, refer to manufacturer). All hazardous components in the mixture present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, should be reported. When reporting waste mixtures, mineral and chemical composition should be listed. (Report for components 2 through 5 in 231, 235, 239, and 243). For aqueous solutions containing one component, list the component and the percentage in the "CHEMICAL NAME" and leave the "HAZARDOUS COMPONENT" Section blank.
228. HAZARDOUS COMPONENTS 1-5 EHS - Check "Yes" if the component of the mixture is considered an Extremely Hazardous Substance as defined in 40 CFR, Part 355, or "No" if it is not. (Report for components 2 through 5 in 232, 236, 240, and 244.)
229. HAZARDOUS COMPONENTS 1-5 CAS - List the Chemical Abstract Service (CAS) numbers as related to the hazardous components in the mixture. (Repeat for 2-5.)
246. LOCALLY COLLECTED INFORMATION - Check these boxes if you are subject to the requirements listed.

County of San Diego CUPA
Department of Environmental Health-Hazardous Materials Division

COUNTY OF SAN DIEGO CUPA
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6880 FAX (858) 505-6848

BUSINESS OWNER/OPERATOR IDENTIFICATION

I. IDENTIFICATION

FACILITY ID #	3	7		0	0	0							1	BEGINNING DATE 100	ENDING DATE 101	

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3		BUSINESS PHONE 102	
BUSINESS SITE ADDRESS 103		BUSINESS FAX 102a	
BUSINESS SITE CITY 104	CA	ZIP CODE 105	COUNTY 108
DUN & BRADSTREET 106		PRIMARY SIC 107	PRIMARY NAICS 107a
BUSINESS MAILING ADDRESS 108a			
BUSINESS MAILING CITY 108b	STATE 108c	ZIP CODE 108d	
BUSINESS OPERATOR NAME 109		BUSINESS OPERATOR PHONE 110	

II. BUSINESS OWNER

OWNER NAME 111		OWNER PHONE 112	
OWNER MAILING ADDRESS 113			
CITY 114	STATE 115	ZIP CODE 116	

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117		CONTACT PHONE 118	
CONTACT MAILING ADDRESS 119		CONTACT EMAIL* 119a	
CITY 120	STATE 121	ZIP CODE 122	

IV. EMERGENCY CONTACTS

–PRIMARY–	–SECONDARY–
NAME 123	NAME 128
TITLE 124	TITLE 129
BUSINESS PHONE 125	BUSINESS PHONE 130
24-HOUR PHONE* 126	24-HOUR PHONE* 131
PAGER # 127	PAGER # 132

ADDITIONAL LOCALLY COLLECTED INFORMATION:

E-MAIL: *	E-MAIL: *

***This information will remain confidential.**

ALWAYS SUBMIT A COPY OF THIS COMPLETED PAGE WITH SUBMITTAL OF ANY OTHER UNIFIED PROGRAM CONSOLIDATED FORM.

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE 134	NAME OF DOCUMENT PREPARER 135
NAME OF SIGNER (print) 136	TITLE OF SIGNER 137	

Business Owner/Operator Identification

Please submit the Business Activities page, the Business Owner/Operator Identification page, and Hazardous Materials - Chemical Description pages for all hazardous materials inventory submissions. For the inventory to be considered complete this page must be signed by the appropriate individual.
(Note: the numbering of the instructions follows the data element numbers that are on the Unified Program Consolidated Form (UPCF) pages. These data element numbers are used for electronic submission and are the same as the numbering used in Division 3, Electronic Submittal of Information.) Please number all pages of your submittal. This helps your CUPA or AA identify whether the submittal is complete and if any pages are separated.
ALWAYS SUBMIT A COPY OF THIS COMPLETED PAGE WITH SUBMITTAL OF ANY OTHER UNIFIED PROGRAM CONSOLIDATED FORM.

1. FACILITY ID NUMBER - Enter your 6 character Permit # on your Unified Program Facility Permit (UPFP). If you do not have a Unified Program Facility Permit, leave this blank.
3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" - Doing Business As.
100. BEGINNING DATE - Enter the beginning year and date (YYYYMMDD) of the inventory report, recyclable materials report, or on-site tiered permitting report for PBR sites.
101. ENDING DATE - Enter the ending year and date (YYYYMMDD) of the reports identified in #100.
102. BUSINESS PHONE - Enter the phone number, area code first, and any extension.
102a. BUSINESS FAX – Enter the business fax number, area code first.
103. BUSINESS SITE ADDRESS - Enter the street address where the facility is located. No post office box numbers are allowed. This information must provide a means to geographically locate the facility. If the mailing address is different, complete #108a- #108d.
104. CITY - Enter the city or unincorporated area in which business site is located.
105. ZIP CODE - Enter the zip code of business site. The zip + 4 may also be added.
106. DUN & BRADSTREET - Enter the Dun & Bradstreet number for the facility. If you do not have one, leave this field blank.
107. PRIMARY SIC NUMBER - Enter the primary Standard Industrial Classification system number for primary business activity. Required for EPCRA. NOTE: If code is more than 4 digits, report only the first four.
107a. PRIMARY NAICS NUMBER - Enter the primary North American Industrial Classification System number.
108. COUNTY - Enter the county in which the business site is located.
108a. BUSINESS MAILING ADDRESS – Enter the mailing address to be used for all official business correspondence. This mailing address must be filled in.
108b. BUSINESS MAILING CITY - Enter the name of the city for the business mailing address.
108c. STATE - Enter the two character abbreviation of the state for the business mailing address.
108d. ZIP CODE - Enter the zip code for the business mailing address. The zip + 4 may also be added.
109. BUSINESS OPERATOR NAME - Enter the name of the business operator which is the name used for mailing correspondence.
110. BUSINESS OPERATOR PHONE - Enter business operator phone number, if different from business phone, area code first, and any extension.
111. BUSINESS OWNER NAME - Enter name of business owner, if different from business operator.
112. BUSINESS OWNER PHONE - Enter the business owner's phone number if different from business phone, area code first, and any extension.
113. BUSINESS OWNER MAILING ADDRESS - Enter the owner's mailing address where business related correspondence should be sent, if different from business site address.
114. BUSINESS OWNER CITY - Enter the name of the city for the owner's mailing address.
115. BUSINESS OWNER STATE - Enter the 2 character state abbreviation for the owner's mailing address.
116. BUSINESS OWNER ZIP CODE - Enter the zip code for the owner’s address. The zip + 4 may also be added.
117. ENVIRONMENTAL CONTACT NAME - Enter the name of the person who receives all environmental correspondence.
118. CONTACT PHONE - Enter the phone number at which the environmental contact area code first, and any extension.
119. CONTACT MAILING ADDRESS - Enter the mailing address where all environmental contact correspondence should be sent.
119a. CONTACT EMAIL – Enter the email address of the environmental contact in 117, if the contact has one.
120. CONTACT MAILING CITY - Enter the name of the city for the environmental contact's mailing address.
121. STATE - Enter the 2 character state abbreviation for the environmental contact's mailing address.
122. ZIP CODE - Enter the zip code for the environmental contact's mailing address. The zip + 4 may also be added.
123. PRIMARY EMERGENCY CONTACT NAME - Enter the name of a representative that can be contacted in case of an emergency involving hazardous materials at the business site. The contact shall have FULL facility access, site familiarity, and authority to make decisions for the business regarding incident mitigation.
124. TITLE - Enter the title of the primary emergency contact.
125. BUSINESS PHONE - Enter the business number for the primary emergency contact, area code first, and any extension.
126. 24-HOUR PHONE - Enter a 24-hour phone number for the primary emergency contact. The 24-hour phone number must be one which is answered 24 hours a day. If it is not the contact's home phone number, then the service answering the phone must be able to immediately contact the individual stated above.
127. PAGER NUMBER - Enter the pager number for the primary emergency contact, if available.
128. SECONDARY EMERGENCY CONTACT NAME - Enter the name of a secondary representative that can be contacted in the event that the primary emergency contact is not available. The contact shall have FULL facility access, site familiarity, and authority to make decisions for the business regarding incident mitigation.
129. TITLE - Enter the title of the secondary emergency contact.
130. BUSINESS PHONE - Enter the business telephone number for the secondary emergency contact, area code first, and any extension.
131. 24-HOUR PHONE - Enter a 24-hour phone number for the secondary emergency contact. The 24-hour phone number must be one that is answered 24 hours a day. If it is not the contact's home phone number, then the service answering the phone must be able to immediately contact the individual stated above.
132. PAGER NUMBER - Enter the pager number for the secondary emergency contact, if available.
133. ADDITIONAL LOCALLY COLLECTED INFORMATION - This space may be used for CUPAs or AAs to collect any additional information necessary to meet the requirements of their individual programs. Contact your local agency for guidance.
134. DATE - Enter the date that the document was signed. (YYYYMMDD)
135. NAME OF DOCUMENT PREPARER - Enter the full name of the person who prepared the inventory submittal information.
136. NAME OF SIGNER - Enter the full printed name of the person signing the page. The signer certifies to a familiarity with the information submitted and that based on the signer's inquiry of those individuals responsible for obtaining the information, all the information submitted is true, accurate and complete.

SIGNATURE OF OWNER/ OPERATOR OR DESIGNATED REPRESENTATIVE - The Business Owner/Operator, or officially designated representative of the Owner/Operator, shall sign in the space provided. This signature certifies that the signer is familiar with the information submitted and that based on the signer's inquiry of those individuals responsible for obtaining the information it is the Signer's belief that the submitted information is true, accurate and complete.

137. TITLE OF SIGNER - Enter the title of the person signing the page.

COUNTY OF SAN DIEGO CUPA
Department of Environmental Health-Hazardous Materials Division

THOMAS BROS COORDINATES _____ **SITE MAP (Page** _____**of** _____**)** **UPFP #** _____

BUSINESS NAME _____ **DATE** _____

BUSINESS ADDRESS _____ **ZIP CODE** _____

OFFICE USE ONLY
REVIEWED BY: _____
DATE: _____

N

NOT FOR PUBLIC DISCLOSURE

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HAZARDOUS MATERIALS BUSINESS PLAN

EMERGENCY RESPONSE PLAN

Date: ____/____/____ UPFP #: _____

1. Business Name: _____
2. Business Site Address: _____
3. Business Telephone: **( )** _____ 24-Hour: **( )** _____
4. Brief description of product manufactured and/or service provided: _____
5. Evacuation Procedures: _____

_____

_____

_____

6. Notification Procedures: In the event of a release or threatened release of a hazardous material the following agencies are to be notified.

	Phone #
A. Local Emergency Response Agencies	**911**
B. Hazardous Materials Division (HMD)	**(858) 505-6657 (after hours follow recorded instructions)**
C. California Emergency Management Agency (Cal EMA) (California State Warning Center)	**(916) 845-8911 or Toll-Free Number (800) 852-7550**
D. _____ (Local Hospital or Medical Center)	_____

Name of person(s) responsible for completing notifications: _____

Describe notification procedures: _____

_____

Contractor's Name/Phone**:** _____

7. Emergency Procedures: _____

FIRE

- _____
- _____
- _____
- _____

SMALL SPILL

- _____
- _____
- _____

LARGE SPILL

- _____
- _____
- _____
- _____

HAZARDOUS MATERIALS BUSINESS PLAN

EMERGENCY RESPONSE PLAN

The Emergency Response Plan must include:

1. Procedures for mitigating a hazardous materials release.
2. Procedures and equipment for minimizing the potential damage of a hazardous materials release.
3. Provisions for immediate notification of the HMD, the California Emergency Management Agency (Cal EMA), and other emergency response personnel as required (e.g., local fire department or paramedics).
4. Evacuation plans and procedures for notification of personnel at the business site.

Instructions for completing the Emergency Response Plan. (Refer to Sample Emergency Response Plan page 18)

At the top of the Emergency Response Plan enter the date. Spaces are provided for your Unified Program Facility Permit (UPFP) number, please enter the number if known.

1. Enter business name.
2. Enter business site address.
3. Enter business telephone, including area code. Include a 24-hour number, if applicable.
4. Enter a brief description of product manufactured and/or business operations. For example, electroplating, storage, automotive repair, hospital, medical device manufacturing, etc.
5. Outline procedures for immediate evacuation of the facility. Include the following:
   a. Type of alarm signals (bells, horns, sirens, shouting, etc.) used to start an evacuation and indicate what alarms are used to give the all-clear signal.
   b. If your facility is large or has several buildings, describe any different alarms used for specific parts of the facility.
   c. Evacuation routes, emergency exits, and staging areas. Include alternate routes, exits, and staging areas. Clearly note them on your site map.
   d. Identify areas of the facility where releases could occur or which would require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.
   e. Identify mechanical systems where releases could occur or which would require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.
   f. Indicate if periodic evacuation drills are practiced to help employees become better prepared for emergencies.
6. Enter the name of the person(s) responsible for completing emergency notifications. Identify the local emergency medical assistance appropriate for potential accident scenarios.
7. Describe procedures for the mitigation of a release or threatened release to minimize any potential harm or damage to persons, property, or the environment. Include equipment and resources for use in emergency situations such as communications and containment equipment, automatic monitoring or fire control devices, onsite spill response teams or prearranged contracts with a spill response company. If procedures are different for spills/emergencies of different magnitude, outline the procedures to be followed in each situation, including the criteria for using a particular procedure. Indicate the personnel who will assist emergency response agencies onsite and any information that would assist them when they arrive.

HAZARDOUS MATERIALS BUSINESS PLAN

EMPLOYEE TRAINING DESCRIPTION

Date: ____/____/____ UPFP #: _____

The following describes the employee training provided for all employees that handle hazardous substances.

1. **Training Topic** - Procedures for handling hazardous materials, including hazardous wastes:
   Persons Trained: _____
   Training Time: _____ **Refresher Frequency**: _____ **Refresher Time:** _____
   Training Content:
   - _____
   - _____
   - _____

2. **Training Topic - Procedures for communication and coordination with emergency response agencies:**
   Persons Trained: _____
   Training Time: _____ **Refresher Frequency**: _____ **Refresher Time:** _____
   Training Content:
   - _____
   - _____

3. **Training Topic - Use of emergency response equipment and materials under the business control:**
   Persons Trained: _____
   Training Time: _____ **Refresher Frequency**: _____ **Refresher Time:** _____
   Training Content:
   - _____
   - _____
   - _____

4. Training Topic - Emergency Response Plan implementation:
Persons Trained: _____
Training Time: _____ **Refresher Frequency**: _____ **Refresher Time:** _____
Training Content:
- _____
- _____
- _____

A drill encompassing safety and spill equipment operation procedures is used by some employers to train employees and improve their emergency response skills.

HAZARDOUS MATERIALS BUSINESS PLAN

EMPLOYEE TRAINING

The Employee Training program must take into consideration the type of work activity, and the level of responsibility of the employees subject to training. The training program should be reasonable and appropriate for the size of the business and the nature of the hazardous materials handled at this site. This training should include the following topics:

1) Procedures for safe handling of hazardous materials, including hazardous wastes
2) Procedures for communication and coordination with emergency response agencies
3) Use of Emergency Response Equipment
4) Emergency Response Plan implementation.

Instructions for completing the Employee Training Description

(Refer to Sample Employee Training Description on page 21)

Complete all sections of the Employee Training Description. For each training topic complete the following training elements:

Persons Trained - List the job classifications or names of the persons that receive training in this topic.

Training Time - State the amount of time spent for this training. Indicate if different employees receive different amounts.

Refresher Frequency - State how often the training is repeated after the initial training (state law requires an annual refresher at a minimum)

Refresher Time - State the amount of time spent for the refresher training.

Training Content - Briefly describe the information covered in the training on this topic. If different information is covered for employees with different job duties, indicate this in your description.

Small Quantity Generator {Less than 1,000 kg (2,200 lb)/month}.
If a business generates hazardous waste, then the business owner/operator must ensure all employees are thoroughly familiar with proper waste handling and emergency procedures. Although the business owner/operator is not required to document or record training sessions related to hazardous waste management, written documentation with signatures of training is strongly recommended. For more information about the types of hazardous waste generators, please see full definition in the General Hazardous Waste Requirements publication HM-9097.

Large Quantity Generator {1,000 kg (2,200 lb)/month or more}
If a business generates more than 1000 kg (2,200 lb) of hazardous waste per month, the business owner/operator must have a hazardous waste training program. This program may include classroom training or on the job instructions.

At a minimum, the training program must be designed to ensure facility personnel are able to respond effectively to emergencies by familiarizing them with emergency systems. Furthermore, if applicable, the program shall include procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment; key parameters for automatic waste feed cut-off systems; communications or alarm systems, response to fire or explosion; response to ground water contamination incidents; and shutdown of operations. The program must include job titles, job descriptions, and specific training for each position.

All employees must be trained within six months from the date of employment or assignment to facility or new position at a facility. The business owner/operator must conduct an annual "refresher" training session on hazardous waste management and emergency procedures. All training sessions must be documented and the training records must be kept on-site. These records will be reviewed during compliance inspections.

EMERGENCY PROCEDURES - POST NEAR TELEPHONE

In case of a fire, spill, or other emergency involving hazardous chemicals or waste, do the following:

Major Emergency

- ☑ Evacuate the affected areas per the facility Evacuation Plan
- ☑ **Call 911** and report the emergency to DEH-HMD and Cal EMA
- ☑ Report the emergency to the facility Emergency Coordinator

Minor Emergency

- ☑ Try to control the emergency if you are trained to do so and can do it safely
- ☑ Report the emergency to the facility Emergency Coordinator (EC)

For Release Reporting see Emergency Contacts below

Facility Emergency Coordinators	NAME	WORK PHONE	CELLULAR PHONE/PAGER	HOME PHONE
Primary		( )	( )	( )
Alternate #1		( )	( )	( )
Alternate #2		( )	( )	( )

EMERGENCY CONTACTS

AGENCY	Telephone Number
Fire Department, Ambulance, Police	**9 1 1**
San Diego County Hazardous Materials Division	(858) 505-6657
California Emergency Management Agency (Cal EMA) **(California State Warning Center)**	(800) 852-7550 (**916) 845-8911**
Local Non-emergency Police/Sheriff/Fire (Optional)	( )
Hazardous Waste Clean-Up Contractor (Optional)	( )
Medical Facility (Optional-Hospital, Urgent Care Clinic, etc.)	( )

EMERGENCY EQUIPMENT

Locations of fire extinguishers, fire alarms (if any), and equipment for controlling chemical spills are shown on the facility site plan posted with this notice. Locations (optional) of electrical gas and water shut-offs, are also shown on the posted facility plan.

NOTE: Ensure that employees are familiar with these emergency and evacuation procedures. An emergency coordinator must be available 24-hours to assist emergency response personnel.

HAZARDOUS WASTE CONTINGENCY PLAN REQUIREMENTS
Hazardous Waste Generators Only

Every hazardous waste generator is required to have an emergency contingency plan. A written Hazardous Waste Contingency Plan is a program designed to minimize hazards to human health and the environment from fires, explosions or an unplanned sudden release of a hazardous waste. This program is developed by the facility owner or operator and establishes actions that must be immediately implemented during an emergency situation. The type of contingency plan depends on the amount and types of waste generated at the facility.

Contingency Plan Requirements for Large Quantity Generators

A Large Quantity Generator (LQG) must complete a Contingency Plan as described in Title 22 of the California Code of Regulations, including the following components:

1. Emergency Procedure to be initiated by Emergency Coordinator including Spill Notification
2. A Coordination with Emergency Responses agencies
3. List of Emergency Coordinators
4. List of Emergency Equipment and required Maintenance/Testing
5. Evacuation Plan
6. Current phone of the California Emergency Management Agency (**916) 845-8911; 800-852-7550**
7. A written Employee Training Program, including documentation.

This plan must be maintained at your facility and you must coordinate with the Department of Environmental Health, Hazardous Materials Division (DEH-HMD). During routine inspections this plan will be reviewed. It is your responsibility to ensure that the plan is kept current and that emergency coordinator changes are submitted to DEH-HMD within 30 days. The DEH-HMD works in conjunction with first response agencies integrating the information provided into the area emergency response plan.

Contingency Plan Requirements For Small Quantity Generators

Generator must post the following information next to the telephone:

1. The name and telephone number of the emergency coordinator;
2. Location of fire extinguishers and spill control material, and, if present, fire alarm; and
3. The telephone number of the fire department, unless the facility has an alarm that goes directly to their local fire department.

Training Requirements: To meet the contingency plan requirements, SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.

Emergency Response Requirements: The Emergency Coordinator or the Emergency Coordinator's designee must respond to any emergencies that arise. The applicable responses are as follows:

1. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;
2. In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil;
3. In the event of a fire, explosion, or other release which could threaten human health outside the facility or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the California Emergency Management Agency (using their 24-hour toll free number (800) 852-7550) and the San Diego County DEH-HMD at (858) 505-6657.

   The report must include the following information:

   - The name, address, and U.S. EPA Identification Number of the generator;
   - Date, time, and type of incident (*e.g.,* spill or fire);
   - Quantity and type of hazardous waste involved in the incident;
   - Extent of injuries or exposures, if any; and
   - Estimated quantity and disposition of recovered materials, if any.

UPFP#_____

CONTINGENCY PLAN-EMERGENCY EQUIPMENT

Date: _____

INSTRUCTIONS: In the blank form provided, describe the safety, spill response, communication and structural containment equipment you have in place at your facility for use in emergency situations. If practical, report the equipment according to individual job, shop or work activity area within our facility. If applicable, include the elements listed in the legend.

Personnel Protective & Safety Equipment

Aprons
Gloves
Coats
Chemical Suits
Boots
Safety Glasses
Face Shield
Hard Hats
Half/Full face Respirator and Respirator Cartridges
Self-Contained Breathing Apparatus
Apparatus (SCBA)
First Aid Kits
Exhaust Hoods
First Aid Stations
Chemical Antidotes

Emergency Response Equipment

Fire Extinguishers (Type A, B, C, D)
Fire Hoses
Eye Wash, Safety Showers
Chemical Monitoring Equipment (Type)
Chemical Alarms - Bells, etc.
Chemical Spill Equipment - Absorbents,
Neutralizers, Sand, Leak Repair Kits (Chlorine), Underground
Tank Leak Detection Monitors

Communications Equipment

Telephones
Intercoms
Portable Radio(s)
Verbal

Structural Equipment

Berms & Dikes
Tanks (Emergency)
Over Pack Drum(s)
Containment Vaults
Blind Sumps

LOCATION SHOP OR AREA	PERSONNEL PROTECTIVE & SAFETY EQUIPMENT	EMERGENCY RESPONSE SPILL EQUIPMENT	COMMUNICATIONS EQUIPMENT	STRUCTURAL EQUIPMENT	INSPECTION FREQUENCY

EXAMPLE

LOCATION SHOP OR AREA	PERSONNEL PROTECTIVE & SAFETY EQUIPMENT	EMERGENCY RESPONSE SPILL EQUIPMENT	COMMUNICATIONS EQUIPMENT	STRUCTURAL EQUIPMENT	INSPECTION FREQUENCY
PAINT SHOP	CARTRIDGE RESPIRATORS, SHOP COATS, GLOVES, EXHAUST HOOD	FIRE EXTINGUISHER SAND	TELEPHONE - VERBAL	NONE	MONTHLY (Safety Equipment)

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UPFP#_____

CONTINGENCY PLAN - EMERGENCY NOTIFICATION PHONE ROSTER

Date: ____/____/____

EMERGENCY (TYPE)	ORGANIZATION	PHONE*	REPORTING REQUIREMENTS	REQUIRED NOTIFICATION PERIOD
Injury (any)	(Hospital) _____ (Nearest hospital capable of handling fire and/or chemical emergency) (Paramedics and/or Ambulance Service) _____	911* 911*	1. Name and telephone of reporter. 2. Name and address of facility. 3. Time and type of incident (fire, chemical, etc.). 4. Name and quantity of material(s) included to the extent known. 5. The extent of injuries if any. 6. Possible hazards to human health or the environment, outside the facility.	Immediately or within 24 hours. Agencies may request a follow-up report in writing. Consult each agency for their reporting requirements.
Poisoning	Poison Control	(800) 876-4766*		
Occupational Accident or Exposure (Notification)	OSHA (Occupational Safety & Health)	(619) 767-2280		
Fire/Explosion	(Fire) _____ (Name of your local Fire District) (Police/Sheriff) _____ (Name of Local Fire/Police Agency)	911* 911*		
Hazardous Material Spill/Release Outside Facility	+(Fire) _____ +San Diego County Hazardous Materials Division (1) +California Emergency Management Agency +National Response Center (U.S. Coast Guard) (Notify only if required by California EMA)	911* (858) 505-6657 (800) 852-7550* (800) 424-8802		
In addition to above if spill reaches: **Storm Drain/Creeks River/Bays** **Sanitary Sewer** **Gaseous Release into Atmosphere** **Underground Storage Tank Leak/Spill**	San Diego Regional Water Quality Control Board (Sewer District) _____ (Name of Sewer District Serving your Facility) San Diego Air Pollution Control District (Fire) _____ (Emergency) San Diego County Hazardous Materials Division San Diego Regional Water Quality Control Board	(858) 467-2952 _____ (Phone) (858) 650-4550 (858) 650-4707 911* (858) 505-6657 (858) 467-2952		
Spill Cleanup (Contractor)	ADDITIONAL RESPONSE RESOURCES (Company Name) _____ (Company of your choosing)	_____	Check with contractor for his requirements.	As soon as possible or As situation requires
Water District	(Utility Name) _____	_____	1, 2, and 3 above.	
Electrical/Gas - Utility	San Diego Gas & Electric (SDG&E)	(800) 611-7343*	1, 2, and 3 above	
Chemical - Emergency Information	CHEMTREC, CHLOREP, Pesticide Safety Team	(800) 424-9300	_____	

* Denotes 24-Hour Number + required notification if hazardous materials emergency extends outside of the facility or requires an evacuation of public areas.

(1) After business hours use 911 to contact the County Environmental Health Department in case of emergency only.

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SPILL OR RELEASE NOTIFICATION

In the event of a spill, have the following information available

State and Local Notification:

1. **Name of business:** _____
2. **Identity of caller:** _____
3. **Chemical name and quantity released (if known):**

_____

4. **Description of what happened:** _____

_____

_____

_____

5. **Was the release contained? Yes No**

Please describe if release entered any waterway or storm drains:

_____

6. **Information about the spill, release or threatened release:**
   a. **Location:** _____
   b. **Date:** ____/____/____
   c. **Time:** _____
   d. **Injuries or Fatalities?** _____
   e. **Evacuation conducted?** _____
   f. **Clean-up by:** _____

Federal Notification:

Federal Notification required additional information for spills (CERCLA chemicals) that exceed federal reporting requirements, which includes:

a. **Medium or media impacted by the release**
b. **Time and duration of the release**
c. **Proper precautions to take**
d. **Known or anticipated health risks**
e. **Name and phone number for more information**

Reporting the Release of Hazardous Materials

Release reporting is required by several state and federal laws. The Hazardous Materials Division, as the local CUPA, is responsible for ensuring that persons, who are required by law or regulation to report a release, do make an accurate report in a timely manner.

What is a reportable release of hazardous materials?
There are two types of hazardous materials releases that must be reported; a threatened release and a significant release.

A threatened release is not a release. It is a condition that creates a substantial probability of harm and makes it reasonably necessary to take immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment. For example:

- *A hazardous material or waste storage tank becomes unstable, and it begins to tilt off center or lean to one side. The tank is in danger of falling over and releasing its contents to the floor or ground.*
- *A valve on a tank or on piping has corroded and it could fail under normal operating conditions.*

A significant release is subjective. All significant releases must be reported.

Whether a release is significant depends on a variety of factors, including the following: *the amount, the hazardousness of the material or waste, and/or the proximity of sensitive receptors such as schools, nursing homes, etc. See checklist below for examples of reportable and non-reportable releases.*

Reporting a release
After the initial immediate measures have been taken to protect human health and the environment, *report the release at once to the following agencies in accordance with State and Federal law.

1. Call 911 for emergency assistance. This usually results in a fire department response and the local CUPA
2. Call California Emergency Management Agency (Cal EMA), 800-852-7550, 916-845-8991
3. Call the local CUPA at 858-505-6657
4. If a release exceeds the federal reportable quantity (RQ), call the National Response Center (NRC), 800-424-8802.

Mandatory release reports
A release of a reportable quantity (RQ) of a hazardous material must be reported. RQs are listed in the CERCLA "List of Lists". This document is maintained by the United States Environmental Protection Agency and is available at http://www.epa.gov/ceppo/pubs/title3.pdf Another way to determine if a RQ has been exceeded is to use the Department of Energy's RQ calculator, an online tool at http://homer.ornl.gov/rq/.
NOTE: Ensure that adequate and appropriate spill containment and mitigation equipment is on hand. It is advisable to periodically check all the hazardous materials stored or used at a facility. Determine the RQs and likely release reporting scenarios in advance. This information could be included in the facility release reporting notification procedures. Flow charts or a list of questions might aid facility personnel in this task.

Determining if a release is reportable. These sample questions can be used to determine if a release is reportable:

- ❑ **Is it a hazardous material?**

This can be any hazardous substance used in your business or any hazardous waste that is generated by your business.

- ❑ **Is there a threatened release?**

Was it necessary to take immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment?

- ❑ **Is there an actual significant release?**
- ❑ **Is the release reportable per federal or state laws and/or regulations?**

Examples of significant releases		**Examples of Releases within a facility's boundaries that that may not be significant:**
❑ *Hazardous material releases that exceed reportable quantities, or* ❑ *Result in an emergency response, or* ❑ *Cause injury, or* ❑ *Go offsite, or* ❑ *Are released into the environment*		❑ *Present no health or safety hazard, or* ❑ *Do not harm environment, or* ❑ *Do not enter atmosphere, or* ❑ *Are completely contained onsite* ❑ *Are completely recovered or removed quickly, or* ❑ *Do not require additional PPE to be worn*

How to follow up after a release:

- Revise the initial release report as necessary to accurately portray the situation.
- Review and revise release response plans if they were not completely effective tools during the emergency.

*For additional hazardous materials release reporting information, review the 2010 California EMA Hazardous Materials Spill/Release Notification Guidance at:
http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Hazardous%20Materials/$file/Spill%20Notification%20Booklet%20Aug-2010.pdf or you may call the Hazardous Materials Duty Desk for San Diego County for a referral to your area's inspection staff at 858-505-6880.

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH-CUPA
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6880 FAX (858) 505-6848

HAZARDOUS MATERIALS BUSINESS PLAN CERTIFICATION

The California Health & Safety Code (H&SC), Division 20, Chapter 6.95, Section 25505 provides for the following:
The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD), as the administering agency, requires a business that handles hazardous materials to submit the hazardous materials inventory, a list of emergency contacts, and a site plan, **in lieu of a complete Hazardous Materials Business Plan (HMBP),** only after the initial submittal of a complete HMBP**.** A complete HMBP includes the items to be submitted to the HMD and an Emergency Response Plan and Employee Training Plan, as established in H&SC Section 25504. The business must annually certify that a complete HMBP has been prepared, is current and is maintained at the site where the hazardous materials are stored. See *Back* for instructions and further clarification

I. IDENTIFICATION

FACILITY ID#	3	7		0	0	0							1		

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3

BUSINESS SITE ADDRESS 103

CITY 104	CA	ZIP CODE 105

II. CERTIFICATION STATEMENT

☐ **CARCINOGEN/REPRODUCTIVE TOXIN ANNUAL RENEWAL WITHOUT CHANGES: This is an annual renewal to certify that the list of carcinogens and/or reproductive toxins last provided is a current list as specified in the San Diego County Code of Regulatory Ordinances Section 68.1113.**

Check only ONE of the following boxes:

☐ **INITIAL CERTIFICATION: This is to certify (H&SC Section 25505(e)(1)) that a complete HMBP, which includes the hazardous materials inventory, a list of emergency contacts, a site plan, emergency response plan, and employee training plan, has been prepared and is maintained at the site where the hazardous materials are stored.**

☐ **ANNUAL CERTIFICATION WITHOUT CHANGES: This is an annual certification (H&SC Section 25505(d) & (e)(2)) that the HMBP, which includes the hazardous materials inventory, a list of emergency contacts, a site plan, emergency response plan, and employee training plan, is current and includes all the information required in H&SC Section 25504, and 25509, and is maintained at the site where the hazardous materials are stored**.

☐ **CERTIFICATION OF CHANGES/REVISIONS: This is to certify that the HMBP has been reviewed (H&SC Section 25505(c) & 25510) and all necessary changes/revisions have been made. The HMBP is current and is maintained at the site where the hazardous materials are stored. Attached are changes to the hazardous materials inventory and/or list of emergency contacts. For site map revisions, submit only the pages that have a change or revision and attach to this certification. This submittal satisfies annual certification requirements specified in H&SC Section 25505(d) & (e)(2).**

As an Authorized Representative, I certify, under the penalty of law, that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete. By checking any of the boxes above I also certify that: a) The information contained in the hazardous materials inventory most recently submitted to the CUPA or Administering Agency is complete, accurate, and up to date; b) There has been no change in the quantity of hazardous materials reported in the most recently submitted inventory; and c) All hazardous materials subject to inventory requirements are listed on the most recently submitted inventory.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE
NAME OF SIGNER (print)	TITLE OF SIGNER

OFFICE USE

INSTRUCTIONS TO CLERICAL STAFF FOR HMBP ACCEPTANCE

☐ **Site Map** _____/_____/_____
☐ ***Emergency Contacts** _____/_____/_____
☐ ***Chemical Inventory** _____/_____/_____

***Note**: Indicate the date that the inventory and/or ER contact information in the KIVA database was reviewed and changes were submitted for processing. If the inventory and ER contact information are exactly the same as it is recorded in KIVA, no changes need to be submitted.

Hazardous Materials Business Plan acceptance date will be changed to the acceptance date on new site map.
A letter will be mailed to business after processing of site map updates**.**

HIRT SITE ☐**

FIRE DIST._____

Specialist's Signature: (only required for new plans or for changes to site maps, chemical inventory and/or emergency contacts)

REMARKS:_____

** If HIRT box is checked, follow HIRT policy to indicate on the inventory forms which hazardous materials make this a HIRT site.

ATTENTION: HAZARDOUS MATERIALS HANDLER

Chapter 6.95 of the California Health & Safety Code (H&SC) establishes minimum standards for Hazardous Materials Business Plans (HMBP). Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material/waste in quantities greater than or equal to the following:

- 55 gallons of a liquid.
- 500 pounds of a solid substance.
- 200 cubic feet of compressed gas.
- A toxic compressed gas (TLV ≤10 ppm) in any amount.
- Extremely hazardous substances in quantities equal to or greater than the Threshold Planning Quantities.

A complete HMBP consists of the following elements as established in H&SC Section 25504:

- Hazardous Materials Inventory
- Site Plan
- List of Emergency Contacts
- Emergency Response Plan
- Employee Training Description

The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD), as the administering agency and with the concurrence of all the local fire jurisdictions, requires a business that handles hazardous materials in reportable quantities to submit changes to the hazardous materials inventory, list of emergency contacts, and site plan, in lieu of a complete HMBP, only after the initial submittal of a complete HMBP.

The business must initially certify that a complete HMBP has been prepared and is maintained at the site where the hazardous materials are stored and must also **annually** re-certify that the HMBP is current and maintained on site. If there are no significant changes after the HMBP has been submitted and certified, then follow the instructions below for "Annual Certification without Changes".

Substantial changes as listed below must be submitted to the HMD within 30 days of the change along with a certification that the HMBP is current and maintained on site:

- **A 100% or greater increase or decrease in the quantity of any hazardous material on the inventory**
- **Addition or deletion of a hazardous material to the inventory**
- **Changes in the storage, location, or use of hazardous materials**
- **Any change in business name, ownership, or address**
- **Any change in Emergency Coordinator/Contact information**

Instructions for Completing the Hazardous Materials Business Plan Certification

Note: The numbering of the instructions follows the data element numbers that are on statewide reporting forms. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, Appendix C.

1. FACILITY ID NUMBER - Enter the 6 character Permit Number from your Permit. If you do not have a Permit, leave this blank.

3. BUSINESS NAME - Enter the full legal name of the business. This is the same as the terms "Facility Name" or "DBA" – Doing Business As.

103. BUSINESS SITE ADDRESS - Enter the street address where the facility is located. No post office box numbers are allowed.

104. CITY - Enter the city or unincorporated area in which business site is located.

105. ZIP CODE - Enter the zip code of business site. The extra 4-digit zip may also be added.

CARCINOGEN/REPRODUCTIVE TOXIN ANNUAL RENEWAL WITHOUT CHANGES: Any business which is required to submit a HMBP and handles a material which is a carcinogen or reproductive toxin, is required to submit a list of each such material handled during the previous year to the Director of the Department of Environmental Health. The list must include all carcinogens and reproductive toxins handled in quantities less than 55 gallons or 500 pounds. The list of such materials handled shall be renewed each year. Check this box to certify that the information previously submitted is still correct and no changes, additions or deletions are necessary. See http://www.sdcounty.ca.gov/deh/hazmat/hmd_forms.html and review HM-9243 (Disclosure of Hazardous Materials Information Bulletin) to find out if you are required to submit this list.

INITIAL CERTIFICATION: Check this box if you are submitting a new HMBP.

ANNUAL CERTIFICATION WITHOUT CHANGES: Check this box if you are submitting an annual certification on an existing plan.

CERTIFICATION OF CHANGES/REVISIONS: Check this box if you are submitting changes to the hazardous materials inventory, list of emergency contacts, or the site plan. All pages should include the new submittal date. For multi-page site maps, include all pages with new submittal date.

Appendix D

FIRST RESPONDER HAZARDOUS MATERIALS BUSINESS PLAN

County of San Diego

First Responder Hazardous Materials Business Plan (FRHMBP)

Developed in with the cooperative efforts of:
San Diego County Fire Chief's Association
San Diego County Department of Environmental Health
City of San Diego Fire-Rescue Department

Updated March 2007

Specific First Responder Business Plan information provided is confidential. It is the responsibility of each individual agency to maintain this confidentiality.

Hazardous Materials Business Plan Requirements

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Business Plans. Business Plans contain basic information on the location; type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Each business shall prepare a Business Plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- § 500 pounds of a solid substance.
- § 55 gallons of a liquid.
- § 200 cubic feet of compressed gas.
- § A hazardous compressed gas in any amount.
- § Hazardous waste in any quantity (to meet the requirements for emergency contingency plans).

The Department of Environmental Health, Hazardous Materials Division (HMD) conducts routine inspections at businesses required to submit Business Plans. The purpose of these inspections is:

- § To ensure compliance with existing laws and regulations concerning Business Plan requirements (Chapter 6.95).
- § To identify existing safety hazards that could cause or contribute to an accidental spill or release.
- § To suggest preventive measures designed to minimize the risk of a spill or release of hazardous materials.

A complete Business Plan must be submitted for all new businesses. After the initial submission, the business must review and recertify the Business Plan every year by submitting a Hazardous Materials Business Plan Certification Statement (DEH:HM-953). They only submit revisions to the inventory, site map, or emergency contacts with the annual Materials Business Plan Certification Statement. A current copy of the Business Plan must be maintained at the site where the hazardous materials are stored. If any section of the Business Plan is found to be deficient, an amended Plan must be completed within 30 days. The Business Plan must also be amended within 30 days for any of the following:

- § A 100% or greater increase in quantity of a hazardous material provided on the inventory.
- § Any handling of a discloseable quantity of a previously undisclosed hazardous material.
- § Any change in the storage, location or use of hazardous materials, which could affect an emergency response.
- § Any change in business name, ownership or address.

For a detailed description of the Hazardous Materials Business Plan requirements see handout Hazardous Materials Business Plan (HMBP) Requirements DEH HM-952.

Specific First Responder Business Plan information provided is confidential.
It is the responsibility of each individual agency to maintain this confidentiality.

INTRODUCTION FIRST RESPONDERS HAZARDOUS MATERIALS BUSINESS PLAN (FRHMBP) PROJECT

This program was initiated in August 1997 as a combined effort of the San Diego City Fire-Rescue Department, the San Diego County Department of Environment Health (DEH) Hazardous Materials Division – (HMD). Under the guidance of the San Diego County fire chiefs Hazardous Materials Section.

The First Responder Hazardous Materials Business Plan Project is designed to develop a useful information format that is sent to all city and county fire departments, through HMD, for businesses that have submitted a HMBP.

This program is essential to keep First Responder personnel aware of chemical hazards in their districts and assisting them in making informed Hazard and Risk analysis during emergency conditions.

The goal of this program is to deliver, to all First Responders, information that is easy to use, up to date and will assist in providing a complete Pre Fire Plan Package.

COMPONENTS OF THE FIRST RESPONDER BUSINESS PLAN

Information Collection - HMBP information is submitted by the business, or collected by HMD inspectors in the process of conducting compliance inspections. The information collected is either entered into a database, or an image of the document (e.g.) is scanned.

Information Extraction - Monthly an extraction of the information collected is made using an MS Access program. The extracted data and images are collated and condensed into a MS Access database called the First Responder Hazardous Materials Business Plan (FRHMBP).

Distribution - Monthly the FRHMBP database is encrypted and password protected, then saved to Compact Disk (CD). Copies of the disk are mailed to first response agencies throughout San Diego County. The CD can by then used by the first responders as a response tool for preplanning and response activities.

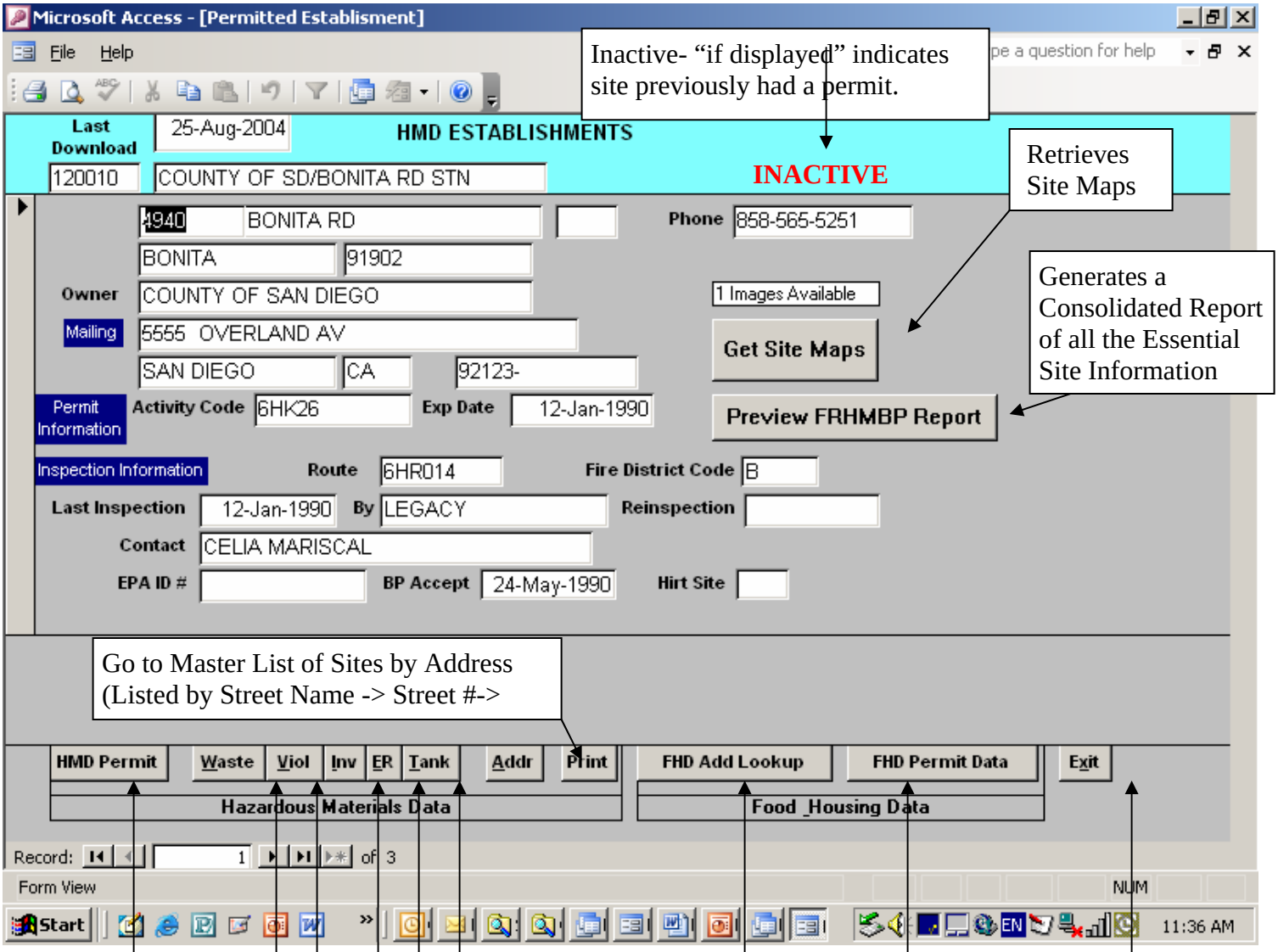
FRHMBP CD - The database provides the user with a quick easy format to look-up information about a specific business plan, and generate a consolidated report called the First Responder Hazardous Materials Business Plan Report (FRHMBP-Report) users can view scanned site maps for each business.

- The FRHMBP-Report summarizes and lists information regarding the Business location, Emergency Coordinator information, and an inventory of the hazardous materials (in order of Hazard Ranking) stored at the facility and various hazards associated with the materials.

- The second page of the plan is the site map with standardized site map symbols and standardized hazard category symbols.

Specific First Responder Business Plan information provided is confidential.
It is the responsibility of each individual agency to maintain this confidentiality.

First Responder Hazardous Materials Business Plan CD Description



rst Re… information

It is the responsibility of each individual agency to maintain its confidentiality.

Sample FRHMBP Report

CONFIDENTIAL LISTING **COUNTY OF SAN DIEGO - DEPARTMENT OF ENVIRONMENTAL HEALTH** DATE 22-Mar-07
FIRST RESPONDER HAZARDOUS MATERIALS BUSINESS PLAN

HIRT SITE (Y/N) : N FIRE 20 SAN DIEGO FD

HAZARD CLASSES ON-SITE
FIRE
ACUTE
CHRONIC

BUSINESS NAME: **BACHEM FINE CHEMICALS**

BUSINESS ADDRESS: 6868 NANCY RIDGE DR
SAN DIEGO 92121

BUSINESS PHONE: 858-455-7050

NATURE OF BUSINESS: BIOMEDICAL/BIOTECH-NOT LARGE MANUFACTURE
CUPA 131116 6HK67

EMERGENCY CONTACTS:

GEOFF UDA	WORK:	585-1044	24 HR:	619-691-0314
BARBARA GARVIN	WORK:	585-1044	24 HR:	619-424-8746

CHEMICAL CLASS:	MAX QTY:		STORAGE	HAZ
ACETONE	80	GAL	METAL DRUM	FIRE
ACETONITRILE	264	GAL	UNKNOWN	FIRE
CARCINOGENS &/OR REPRODUCTIVE TOXINS				
CHLOROFORM-D	150	GAL	GLASS BOTTLE	ACUTE
HEXANE	57	GAL	GLASS BOTTLE	FIRE
HPLC SOLVENT PREMIX	55	GAL	METAL DRUM	FIRE
ISOPROPYL ALCOHOL	115	GAL	CYLINDER	FIRE
METHANOL	125	GAL	GLASS BOTTLE	FIRE

HAZARDOUS WASTE: COMMENTS:	MAX QTY:		STORAGE	
WASTE 214 UNSPEC SOLVENT MIXTURE	55	GAL	METAL DRUM	METHANOL, ACETONITRILE
WASTE 343 UNSPEC ORGANIC LIQUID MIXTURE	10	GAL	METAL DRUM	WASTE ORGANIC LIQUID
WASTE 551 LABORATORY WASTE CHEMICALS	100	LBS	PLASTIC DRUM	CHLOROFRM & ETHIDIUM BRM

A detailed description of the information compiled in the above report can be found in the HMBP Handout

SECTION I INVENTORY
Sample Inventory Form 4
Instructions for completing Inventory Form 5

SECTION V FORMS
* Inventory Form. 17
* Owner/Operator Identification information 19

Specific First Responder Business Plan information provided is confidential.
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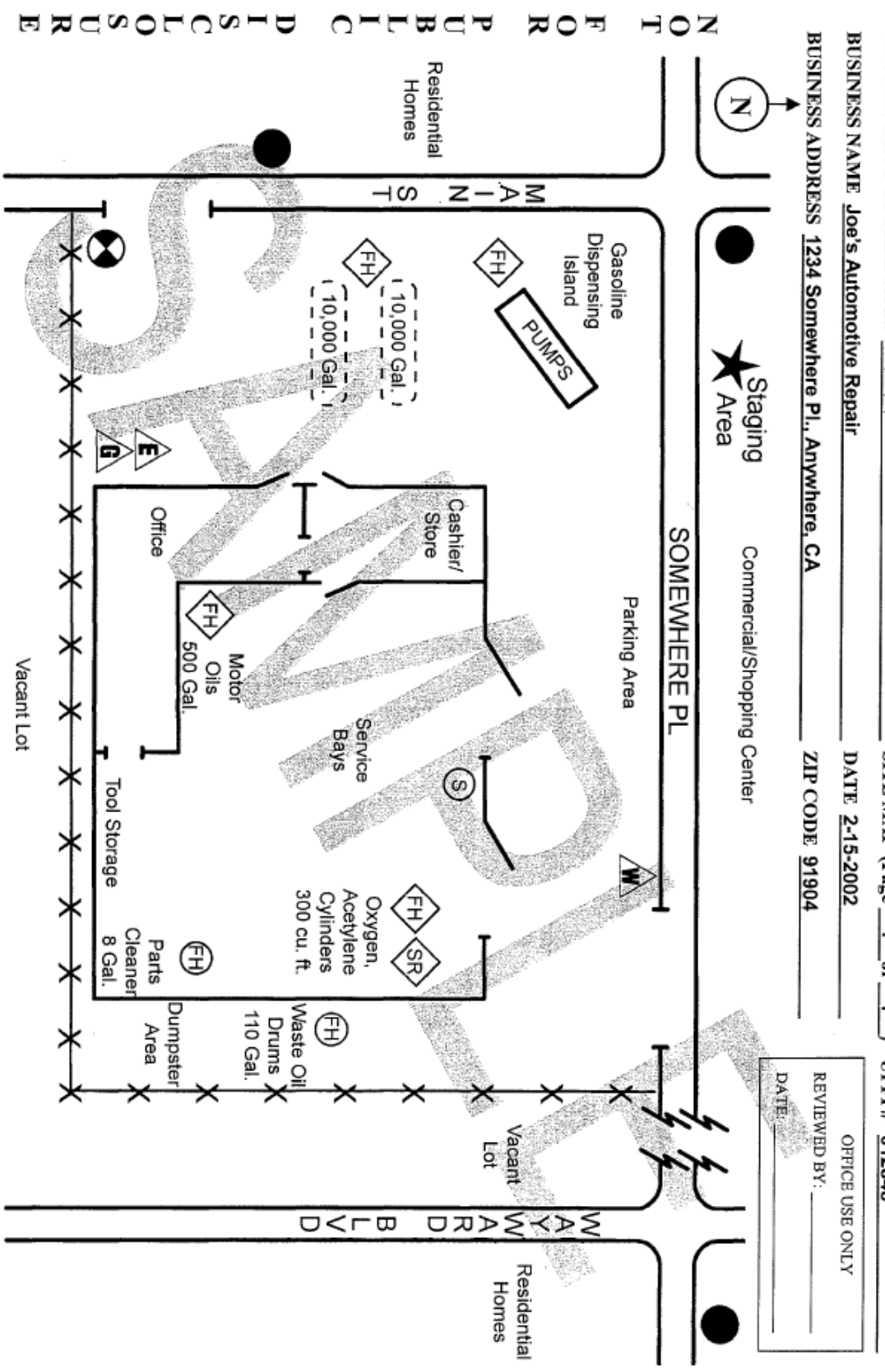
Sample Scanned site map.



Specific First Responder Business Plan information provided is confidential. It is the responsibility of each individual agency to maintain this confidentiality.

A detailed listing of site map requirements, and symbols can be found in the HMBP Handout;

SECTION I INVENTORY

Instructions for developing Site Map 6
Standardized Site Map Symbols 8
Sample Site Map. 9

Specific First Responder Business Plan information provided is confidential.
It is the responsibility of each individual agency to maintain this confidentiality.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2139
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

July 22, 2004

Dear Fire Chief/Fire Marshall:

DISTRIBUTION OF HAZARDOUS MATERIALS DISCLOSURE INFORMATION ON CD-ROM.

The Hazardous Materials Division (HMD), is the Certified Unified Agency (CUPA) for the Hazardous Materials Business Plan Program in San Diego County. We have a legal responsibility to provide your agency with this disclosure information on a regular basis. HMD is currently providing updates to this information in hard copy on a monthly basis. In addition, most Fire Departments/Districts are receiving a quarterly CD-ROM containing site information, emergency contacts, and hazardous materials information.

The HMD has now developed a CD-ROM format that includes site information, emergency contacts, hazardous materials information, and **site maps**. This new format also includes a First Responder Business Plan Summary report. The integration of site maps into the CD-ROM is a significant improvement. With this improvement, HMD is offering all Fire Departments/Districts in San Diego County the option of receiving a monthly CD in place of the paper hard copies. HMD believes the electronic version of the data is much easier to use, store, and handle.

As before, the HMD is hereby informing you that the information you are, and will be receiving in hard copy and on the CD-ROM is **CONFIDENTIAL and should be made available for emergency response use only.** By accepting the CD-ROM and other hard copies of information you are agreeing to refer any requests for copies of the information to the HMD; HMD will provide the disclosure data in accordance with the law. CD-ROMs and hard copies held by your agency should be destroyed when the information is outdated and no longer of use to your agency.

Additionally, we need to update our records to be assured that the disks and/or hardcopy versions of the disclosure data are going to the correct location. In order to begin receiving the monthly CD-ROM in place of the hard copies, you must complete the attached survey. Please complete the attached survey in a timely manner and return the form to DEH. The information received will help DEH to provide you with the best information, in the most usable format possible.

To use the disks provided your computer must have:

- Microsoft Access 2000 or 2003**,**
- The computer must have a CD reader,
- The computer hard drive must have at least 700 megabytes of free space before you begin the download,
- The database must be loaded directly onto the hard disk for use (400 megabytes),
- Once downloaded, the data can be copied to another area or CD for use but remains confidential,
- The data can be viewed using Microsoft Access 97 but site map images will not be available.

The CD's have a search program built in that allows a department to look up a business by address or name. The data fields then list the Permit Information, Emergency Contacts, Inventory, Wastes, and Violations. Once a business is selected, the site maps for that site can be viewed. The site maps and a summary report can be viewed electronically or printed (a printer must be installed). The data provided is sortable using the underlying data tables and Microsoft Access program to search for information, such as how many businesses within your jurisdiction are using chlorine (as an example).

We hope the information in this format will be useful and provides you with the information necessary to protect the community and the health and safety of the fire fighters that respond to an emergency involving hazardous materials. For additional information on the proper use of the enclosed CD-ROM, please contact Brad Long at (619) 338-2216 or Matt Trainor at (619) 338-2372.

Sincerely,

MICHAEL DORSEY, Chief
Hazardous Materials Division

Attachment: Survey form

Cc: Matt Trainor
Nick Vent
Brad Long

First Responder Business Plan CD-ROM Survey July 2004

Currently disclosure information is sent to:

If this is not correct, please fill in the correct contact

_____

Currently disclosure information is mailed to:

If mail address is not correct, make necessary changes

_____

_____

_____

Please indicate your response to each of the following statements by circling "Yes" or "No".

Yes No My department is electing to receive a monthly CD-ROM in place of the current monthly paper reports.

Yes No My department has a computer that can use the First Responder Business Plan CD-ROM.

Yes No My department has a computer with a copy of Microsoft Access 2000 or 2003, or the Microsoft Office 2000 or 2003 Suite of programs.

Yes No My department will destroy outdated versions of the First Responder Business Plan CD-ROM and any copies (paper or electronic).

Yes No My department agrees to keep the information provided confidential and used only for emergency response related activities

From: _____/_____

Print Name Signature

_____/_____

Title Department

_____/_____

Phone Number Fax Number

Fax this form back to:

Attention: Nick Vent, Supervising Environmental Health Specialist
Hazardous Materials Division

Fax Number: 619-338-2139

Appendix E

COUNTY OF SAN DIEGO
CALIFORNIA ACCIDENTAL
RELEASE PREVENTION
PROGRAM GUIDELINES
(CalARP)

CalARP Supplement to The San Diego Area Plan

Below are extracts from Title 19 of the California Code of Regulations. These requirements are to be completed after the catastrophic or threatened catastrophic release of a CalARP regulated substances.

Section 2760.9 Incident Investigations.

(a) The owner or operator shall investigate each incident that resulted in, or could reasonably have resulted in, a catastrophic release of a regulated substance.
Final CalARP Program Regulations June 28, 2004 Page 49
(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.
(c) An incident investigation team shall be established and consist of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.
(d) A report shall be prepared at the conclusion of the investigation which includes at a minimum:
(1) Date of incident;
(2) Date investigation began;
(3) A description of the incident;
(4) The factors that contributed to the incident; and,
(5) Recommendations resulting from the investigation.
(e) The owner or operator shall establish a system to promptly address and resolve the incident report findings and recommendations. Resolutions and corrective actions shall be documented.
(f) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.
(g) Incident investigation reports shall be retained for five years.

NOTE: Authority cited: Sections 25531 and 25534.05, Health and Safety Code.
Reference:
Section 25531, Health and Safety Code; and Section 68.81, Part 68, Title 40, Code of Federal Regulations.

SAN DIEGO COUNTY
DEPARTMENT OF ENVIRONMENTAL HEALTH

HAZARDOUS MATERIALS DIVISION

California Accidental Release Prevention Program (CalARP) Guidelines

Revised
March 22, 2004

These guidelines can only be used by facilities that have obtained prior approval from the San Diego County Hazardous Materials Division (HMD) California Accidental Release Program (CalARP) Coordinator at (858) 505-6880.

It is recommended that the user read the entire contents of this document prior to proceeding with their Risk Management Plan (RMP).

These Guidelines are intended to assist stationary sources with preparing a Risk Management Program. They are not intended to replace the regulations found in Chapter 4.5, Division 2, Title 19 of the California Code of Regulations.

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SAN DIEGO COUNTY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
RISK MANAGEMENT PLAN (RMP) WORK PLAN

Stationary Source (SS) Information

Name of SS: _____ SS Permit # H _____.

Site Address of SS: _____ City _____ Zip _____.

Latitude, and Longitude _____ SS Dun and Bradstreet (D&B)# _____.

SS USEPA Identifier _____ # of full-time employees at the SS _____.

Corp/Parent Company Name _____ D&B# _____.

SS RMP Contact, Owner/Operator Information

Name of Owner/Operator _____.

Name of RMP Contact: _____ Title _____.

Mailing Address: _____ City _____ Zip _____.

Phone #( ) - Fax# ( ) - E-mail: _____.

24-Hour Emergency Contact _____ Title _____ Phone# ( ) - .

Consultant Contact Information (if applicable)

Company Name: _____.

Address: _____ City _____ Zip _____.

Phone #( ) - Fax# ( ) -

Name of Project Coordinator: _____ E-mail _____.

Process Information

Regulated Substance: _____ CAS number - - .

Max Qty (in Lbs.) RMP Program Level: 1 2 3 (circle) 4 digit SIC/NAIC Code: _____.

Is the stationary source is subject to Part 355 of Title 40 of CFR? Y N (circle)

Process Subject to PSM Sec. 5189 of Title 8, CCR? Y N (circle)

Process Subject to Title V Permit? Y N (circle)

Process Installation date (new/modified facility) _____ / _____ / _____.

Date of the last safety inspection by a federal, state, or local agency / / . Who? _____.

RMP Technical Studies

Type of Hazard Evaluation to be conducted: _____

Date of Seismic Walkthrough: _____.

Methods for Air Dispersion Modeling

Manual Calculations (Tables): Y N (circle) or, Computerized Air Model: Y N (circle).

Name of Computerized Model (if applicable) _____.

Passive Mitigation considered for Worst-Case (specify) _____.

Certified Accurate By: _____ Date: _____.

Stationary Source (SS) Information
Name of Stationary Source: This is your business/facility name, DBA.
Stationary Source Permit No. #: This is your health permit number. Complete if known.
Address of Stationary Source: This is the site address of your facility.
Latitude, and Longitude: Enter the Latitude and Longitude of the stationary source.
SS Dun and Bradstreet (D&B)#: Enter the SS Dun and Bradstreet Number
SS USEPA Identifier: **Enter the SS USEPA ID Number (If apliciable)**
# of full-time employees at the SS: **Enter the number of full-time employees at the SS**
Corp/Parent Company Name: **Provide the name of parent of corporet owner.**
Corp/Parent Company D&B#: **Provide the Dun and Bradstreet number of the parent owner.**

SS RMP Contact, Owner/Operator Information
Name of Owner/Operator: Provide the name of the owner of the SS
Name of RMP Contact: Provide the name of the person who will be your primary RMP contact.
Title: Provide the title of the RMP Contact
Mailing Address: Provide your mailing address.
Phone#: Provide the phone number for your primary RMP contact.
Fax#: Provide a fax number for the primary RMP contact.
E-mail: Provide the e-mail address for your primary RMP contact if one is available.
24-Hour Emergency Contact: **Provide the name of a person availagle for emergencies 24 hr a day.**
Title: **Title of the 24 hr emergency contact person.**
Phone#: **Provide the 24 hr. phone number for the contact person**

Consultant Contact Information (if applicable)
Company Name: Provide the company name of your consultant.
Address: Provide the address of your consultant.
Phone#: Provide the phone number of the RMP consultant project coordinator.
Fax#: Provide the fax number of your consultant.
Name of Project Coordinator: Provide the name of the primary RMP consultant project coordinator.
E-mail: Provide the e-mail of your consultant if known.

Process Information
Regulated Substances: Provide the names and quantities (in pounds) of the regulated substances in your process(es).
CAS number: Provide the Chemical Abstract Service number of the regulated substance.
RMP Program Level: Circle the program level that you will be developing for your RMP(s).
4 Digit SIC/NAIC Code: Provide either the Standard Industry Classification or North American Industrial Classification System code for you RMP processes.
SS is subject to Part 355 of Title 40 of CFR: Circle yes if the SS is subject to chemical disclosure under Title 40 CFR Part 355, circle no is quantity onsite is below Threshold Planning Quantities.
Process Subject to PSM: Circle either Y if you process is subject to OSHA Process Safety Management (PSM) or N if it is not subject to PSM.
Process Subject to Title V Permit: Circle either Y if your process is subject to the Title V air permit requirements or N if it is not subject to Title V.
Process Installation date (new/modified facility): If you are adding a new process or modifying an existing process, provide the date you plan to start-up the process.
Date of the last safety inspection: Provide the date and the name of the agency that last performed a safety inspection of the SS.

RMP Technical Studies
Type of Hazard Evaluation to be conducted: Provide the name of the type of hazard evaluation you plan to conduct, i.e., What-if/Checklist, HAZOP, etc.
Date of Seismic Walkthrough: Provide the projected date you plan to do your seismic walkthrough.

Methods of Air Dispersion Modeling
Manual Calculations (Tables): If you plan to use manual calculations or EPA look-up tables for your offsite consequence analysis circle Y, if not circle N.
Computerized Air Model: If you plan to use a computerized air model for you offsite consequence analysis circle Y, if not circle N.
Name of Computerized Model (if applicable): If you plan to use a computer air model provide the name and version.
Passive Mitigation for Worst-Case (specify): Specify the type of passive mitigation you plan to use for you worst-case offsite consequence. If you do not plan to use passive mitigation state "none".
Certifed by: The person who certifies that the information provided is true and accurate signs here.
Date: Provide the date the work plan was completed and signed.

GENERAL GUIDELINES FOR THE PREPARATION AND SUBMISSION OF A RISK MANAGEMENT PLAN PUBLIC DOCUMENT

The Risk Management Plan (RMP) Public Document should reflect a facilities overall effort in the management and prevention of risks associated with the storage, use and/or processing of regulated substances (RSs).

The RMP Public Document is **supported** by the following technical studies:

- Off-Site Consequence Analysis
- Program 2 or Program 3 Prevention Program (if applicable)
- External Event Analysis

The RMP Public Document shall be in the form of **a single volume for all Regulated Substances** handled unless otherwise instructed by the Hazardous Materials Division (HMD).

Criteria and Review of Draft Plans

Draft sections of the RMP should be submitted for **preliminary review** as soon as completed. This will enable the HMD to make comments and request corrections prior to the submission of the completed RMP. These interim course corrections greatly improve the cost effectiveness of preparing the final document and significantly reduce the time to review and to make corrections to the RMP. Draft sections of the RMP should be submitted in duplicate in **loose-leaf three ring binders.**

Submitting to USEPA – (For regulated substances greater than federal threshold level)

Those facilities that have regulated substances **greater than the federal thresholds** must submit their RMP to USEPA either electronically using *RMP Submit*™ or in the case of small businesses the RMP can be reported on paper if they do not have computer access. An "electronic waver" must be obtained from USEPA or contact the HMD Cal ARP Coordinator at 619-338-2453.

Submitting to HMD – (For regulated substances greater than state threshold level)

Two copies of the RMP Public Document shall be provided to the HMD. These copies shall be provided in loose-leaf three ring binders. In addition all copies of the final RMP public document submitted to HMD shall be indexed and tabbed with individual sections as follows (ONLY SECTION 1 - RMP EXECUTIVE SUMMARY and SECTION 2 – EPA RISK MANAGEMENT DATA ELEMENTS ARE SUBMITTED TO USEPA):

1. **RMP EXECUTIVE SUMMARY** - The RMP Executive Summary should be brief and concise*, no more than four pages in length for sources with one or two regulated substances. Your executive summary shall include:

   (a) The accidental release prevention and emergency policies in place at your facility.

   (b) A description of your regulated processes and regulated substances handled. This information may be presented in a paragraph or as bullets.

The information should include the following:

- Primary activities (e.g., manufacture of polyethylene, pulp mill, chlorine wholesaler);
- Use of regulated substances (e.g., chlorine used to produce bleach, treat wastewater, repackage for sale);
- Quantities handled or stored.

(c) The general accidental release prevention program and chemical-specific prevention steps. For example, you may state that you are in compliance with the OSHA PSM rule and the CalARP requirements. You may want to highlight general or specific steps that you believe are key to your prevention program. These steps may be either technological (e.g., backup systems) or procedural/managerial (e.g., improved maintenance or training).

(d) The five-year accident history. This should be a summary (e.g., we have had five accidental releases of chlorine in the past five years; the largest release was 1500 pounds. No one offsite was injured, but several houses were evacuated as a precautionary measure during the releases). Do not present this information in a table format.

(e) Planned changes to improve safety.

* A more detailed description is to be provided in the body of the report.

2. **EPA RISK MANAGEMENT DATA ELEMENTS** – A) Those facilities that have regulated substances **greater than the federal thresholds** must submit their RMP Data Elements to USEPA using *RMP* 2004 Submit™* and submit a copy of all Data Elements to HMD. B) For those facilities that have regulated substances below the federal threshold but above the California thresholds, complete and submit to HMD the USEPA RMP Data Elements Section 2 and 3 only. The USEPA RMP Data Elements can be obtained on the EPA web site at www.epa.gov/swercepp or by calling the HMD CalARP coordinator at or 619-338-2453.

3. **SAFETY** – List and describe all the safety features (equipment, administrative, etc.) that are in place to make this a safe process(s) or are to be implemented. Include the dates of implementation.

4. **OFFSITE CONSEQUENCE ANALYSIS COMPONENT** - The Offsite Consequence Analysis (OCA) describes the potential exposure levels for surrounding populations and environmental receptors from accidental releases of **regulated substances**. Provide the following information for each Program 1, 2, or 3 covered process:

(a) **For the worst-case scenarios**, describe the vessel or pipeline and substance selected as worst-case, assumptions and parameters used, and the rationale for selection. Assumptions should include any passive mitigation that was assumed to limit the quantity that could be released. State the distance to end point. Documentation should include the anticipated effect of the controls and mitigation on the release quantity and rate. Use a summary table to present the parameters. (**See Appendix for example**).

(b) **For the alternative release scenarios (not needed in Program 1)**, describe the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios. Assumptions shall include use of any active and passive mitigation that was assumed to limit

the quantity that could be released. State the anticipated distance to end point. Documentation shall include the effect of the controls and mitigation on the release quantity and rate. Use a summary table to present the parameters. (**See Appendices for example**).

(c) For each scenario state the chemicals name, quantity (in pounds), and physical state (toxic only).

(d) Describe the methodology. Give the computer air model used (if applicable) or state which USEPA Guideline (include version date) was used. If a USEPA Guideline was used, identify the specific tables referenced. If a computer air model was used describe the known limitations of the air model.

(e) Document the estimated quantity released, release rate, and duration of the release.

(f) Document the wind speed and atmospheric stability class (toxic only).

(g) Document the topography i.e., rural or urban (toxic only).

(h) Document passive and/or active mitigation (alternative scenario only) considered.

(i) Provide the data used to estimate the potentially affected population and environmental receptors.

(j) Provide a list of the following known to be within the zone of vulnerability: the estimated residential population; presence of any schools, hospitals, long term health care facilities, child day care facilities; parks and recreational areas; major commercial, office or industrial areas; and prisons. Populations estimated need only include residential populations and may be rounded to two significant digits (e.g., 5,500; 11,000). Also identify and list any environmental receptors, National or state parks, forests, or monuments; officially designated wildlife sanctuaries, preserves, or refuges; and federal wilderness areas.

(k) Provide a map showing the footprint of the facility, vulnerable zones with a radius equal to the distance to the toxic or flammable endpoint for the worst case and alternative scenarios. Identify within the vulnerable zone (up to one mile from the facility) on the map the nearest public receptor, the location of any public or private school, and any identified environmental receptor.

5. **ACCIDENT HISTORY/INVESTIGATION** - Provide the following supplemental information:

(a) Identify who is responsible by title for investigating accidents.

(b) Describe management's involvement.

(c) State if the accident investigation program addresses "near misses". A "near miss", is any incident, which would have resulted in an unintentional release of a Regulated Substance, if action outside the scope of normal operating procedures had not occurred.

(d) Prepare and include a decision tree or flow chart for the handling of any release, accident, incident, reporting or investigation involving a Regulated Substance. All facilities shall include as a minimum, a description of the program to be put in place for the reporting, investigation and follow-up actions to be taken in the event of a future release or near miss.

6. **PREVENTION PROGRAM 2 (IF APPLICABLE)** – Provide the following supplemental information:

(a) Provide a specific list of the Federal or state regulations or industry-specific codes and standards used to demonstrate compliance with the safety information requirements. Include the date of the most recent review or revision of the safety standards.

(b) Provide a table of detection and monitoring devices and methods. Include their sensitivities.

(c) Provide a list of the standard operating procedures in place for the process.

(d) Provide a list of maintenance procedures in place. Provide a list the major equipment components of the process that are inspected or tested.

(e) Provide a list of any changes to the process (SOPs, maintenance, training, etc.) as a result of the compliance audit. A person knowledgeable in the process **must conduct a compliance audit at least once every three years.**

7. **PREVENTION PROGRAM 3 (IF APPLICABLE)** – For each Program 3 process, provide the following information:

(a) Provide a specific list of the Federal or state regulations or industry-specific codes and standards used to demonstrate compliance with the safety information requirements. Include the date of the most recent review or revision of the safety standards.

(b) Provide a table of detection and monitoring devices and methods. Include their sensitivities.

(c) Provide a list of the standard operating procedures in place for the process.

(d) Provide a list of maintenance procedures in place. Provide a list the major equipment components of the process that are inspected or tested.

(e) Provide a list of any changes to the process (SOPs, maintenance, training, etc.) as a result of the compliance audit. A person knowledgeable in the process **must conduct a compliance audit at least once every three years.**

(f) Describe your management of change procedures you have in place to manage changes (other than "replacement in kind") to process chemicals, technology, equipment, and procedures. Summarize the following items regarding management accountability: Titles of individuals responsible for implementing the RMP and associated programs; Chain-of-command and responsibilities; and the designated RMP coordinator.

(g) Briefly describe the plan you have in place to ensure your employees and their representatives have access to process hazard analysis(s) and other Risk Management Plan information.

(h) Briefly describe your hot work permit procedures. Include the date of the most recent review or revision.

(i) Summarize both yours and the contractor's responsibilities where contractors perform maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process.

8. **EXTERNAL EVENTS** - Provide the following information regarding external events that were reviewed as part of or separate from you process hazard analysis:

(a) A list of the types of natural or human caused external events considered.

(b) A description of the parameters used in considering a seismic analysis.

(c) Provide the edition of the Uniform Building Code that was used when the process was designed.

(d) Provide for each external event, with a potential to create a release of a regulated substance that will reach an endpoint offsite: the expected date of completion of any changes to mitigate the potential release; a description of the major hazards identified; process controls and mitigation in place; monitoring and detection systems in use.

9. **EMERGENCY RESPONSE PLAN** – Provide the following supplemental information [a copy of your Hazardous Materials Business Plan may suffice for (a) and (b)].

(a) Describe what emergency response procedures you have in place in the event of a release of a regulated substance. This must describe the actions to be taken by employees and other individuals on-site over the entire course of the release event including at least the following:

- Activation of alarm system and interpretation of signals;
- Safe evacuation, assembly, and return;
- Selection of response strategies and incident command structure;
- Use of response equipment and other release mitigation activities; and
- Post-release equipment and personnel cleanup and decontamination.

(b) Describe what offsite response assistance you will require for potential release scenarios, including fire fighting, security, and notification of the public.

(c) Describe who will be in charge of the response operation and how will authority be delegated down the internal and offsite chain of command.

(d) Describe any planned drills with emergency responders. Provide dates.

(e) List all other federal or state emergency plan requirements to which your facility is subject to.

10. **CERTIFICATION** – The RMP shall be certified as follows:

(a) **Program 1**, certify in the RMP the following: "Based on the criteria in Section 2735.4 of Title 19 CCR, the distance to the specified endpoint for the worst-case accidental release scenario for the following process(es) is less than the distance to the nearest public receptor: [list process(es)]. Within the past five years, the process(es) has (have) had no accidental release that caused offsite impacts provided in the risk management program Section 2735.4(c)(1). No additional measures are necessary to prevent offsite impacts from accidental releases. In the event of fire, explosion, or a release of a regulated substance from the process(es), entry within the distance to the specified endpoints may pose a danger to public emergency responders. Therefore, public emergency responders should not enter this area except as arranged with the emergency contact indicated in the RMP. The undersigned certifies that, to the best of my knowledge, information, and belief, formed after reasonable inquiry, the information submitted is true, accurate, and complete". This certification must be signed by the owner or operator of the stationary source, with their title, and date signed.

(b) **For Program 2 and 3**, the owner or operator shall submit in the RMP a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is

true, accurate, and complete. This certification must be signed by the owner or operator of the stationary source, with their title, and date signed.

11. **REVISIONS** - made to the RMP public document shall be recorded on a revisions log sheet. **See Appendices for an example** of revision log sheets.

GUIDELINES FOR TECHNICAL SUPPORTING RECORDS

CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM (CalARP)
Separate records for supporting technical information must be prepared and maintained in the custody of the facility. The San Diego County Department of Environmental Health, Hazardous Materials Division (HMD) may choose to review the facility's supporting technical information by either requesting submittal of such information or requesting to review such information during an audit of the facility.

Facilities are to categorize the records of their supporting technical information as follows:

I. Offsite Consequence Analysis
II. Prevention Program
   a. Program 2 (if applicable)
   b. Program 3 (if applicable)
III. External Events (Seismic Analysis)

In developing your Risk Management Program the HMD recommends the following USEPA Guidance Documents: (Documents can be obtained from the EPA web site at **http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/EPAguidance.htm**

Accidental Release Information Program- all facilities

Risk Management Program and Plan for Ammonia Refrigeration - Ammonia Refrigeration facilities

Risk Management Program and Plan for Water Treatment - Water Treatment facilities

Risk Management Program and Plan for Propane Users and Small Retailers - Propane facilities

Risk Management Program and Plan for Propane Storage Facilities – Propane facilities

Risk Management Program and Plan for Wastewater Treatment Plants – Wastewater Treatment facilities

Risk Management Program and Plan for Warehouses – Warehouse facilities

Risk Management Program and Plan for Chemical Distributors – Chemical Distribution facilities

I. OFFSITE CONSEQUENCE ANALYSIS

The Offsite Consequence Analysis (OCA) describes the potential exposure levels for surrounding populations and environmental receptors from accidental releases of

regulated substances. Specific release scenarios and dispersion models are used to generate a circular area of theoretical exposure around the point of accidental release. This generated exposure area is referred to as a "zone of vulnerability".

Computer air dispersion models or tables such as those provided in USEPA's *"RMP Offsite Consequence Analysis Guidance"* document are used to calculate the air concentration of a regulated substance as a function of distance from the point of release. A "toxic endpoint" concentration value for the regulated substance is input into a computer model, or looked up in table, for the selected release scenario to calculate the "zone of vulnerability".

A. General Requirements

Section 2745.4 in Title 19 CCR, requires that the following offsite consequence scenarios be performed:

Program 1
Worst-Case
One worst-case release scenario for each Program 1 level process must be evaluated.

Program 2 or 3
Worst-Case
A minimum of one worst-case release scenario to represent all toxic regulated substances held above the threshold quantity and one worst-case release scenario to represent all flammable regulated substances held above the threshold quantity. Additional worst-case release scenarios may be needed depending on the regulated substances in process and their location within the facility.

Alternative
A minimum of one alternative release scenario for each toxic regulated substance held above the threshold quantity and one alternative release scenario to represent all flammable regulated substances held above the threshold quantity.

B. Air Dispersion Models

The USEPA has developed a "RMP Offsite Consequence Analysis Guidance" document that includes tables for calculating air dispersion of toxic regulated substances and flammable regulated substances. This is available by contacting USEPA at:

U.S. Environmental Protection Agency
National Center of Environmental Publications
And Information (NCEPI)
P.O. Box 42419
Cincinnati, OH 45242
1-800-490-9198

All proprietary computer air models must be approved by the HMD. Prior to approval for use, the HMD may request a copy of the proprietary computer air model from the facility or their consultant for review.

C. Worst-Case Release Scenario Analysis

1. Definition of Worst-Case Scenario

USEPA has defined worst-case release as the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to a specified endpoint. For the worst-case analysis, you do not need to consider the possible causes of the worst-case release or the probability that such a release might occur; the release is simply assumed to take place.

2. Determining the Quantity for the Worst-Case Scenario

For analysis of the worst-case scenario, you must consider the largest quantity of a regulated substance handled on site in a single vessel or process line failure at any one time. A summary of worst case release scenario requirements is provided in the appendices.

It is the HMD's opinion that administrative controls to limit vessel inventories are often disregarded by facilities under special circumstances when additional inventory is needed. Therefore, the HMD does not allow administrative controls to be taken into account when determining worst-case analysis.

3. Selecting a Worst-Case Scenario

The hazard assessment requires a single offsite consequence analysis of the worst-case scenario for substances in each hazard category (i.e., one for regulated toxic substances and one for regulated flammable substances). Only the hazard for which the substance is listed needs to be considered (i.e., substances on the list of regulated toxic substances that are also flammable should only be analyzed for their toxic hazard; substances on the list of regulated flammable substances should be considered only for flammability).

The regulated substance chosen for the consequence analysis for each hazard should be the regulated substance that has the potential to cause the greatest offsite consequence. Choosing the toxic regulated substance that might lead to the greatest offsite consequence may require a screening analysis of all the regulated toxic substances on site, because the potential consequences are dependent on a number of factors, including quantity, toxicity, and volatility. Location (distance to fence line) and conditions of processing or storage (e.g., a high temperature process) also should be considered.

For regulated flammable substances, the consequences of a vapor cloud explosion must be considered in the analysis. The severity of the consequences of a vapor cloud explosion depends on the quantity of the released regulated substance in the vapor cloud and its heat of combustion. In most cases, the analysis probably should be based on the regulated flammable substance present in the greatest quantity; however, a substance with a high heat of

combustion may have a greater potential offsite impact than a larger quantity of a substance with a lower heat of combustion. In some cases, a regulated flammable substance that is close to the fence line might have a greater potential offsite impact than a larger quantity farther from the fence line.

For worst-case scenarios, you are allowed to consider passive mitigation system, such as dikes, firewalls, blast walls, enclosures, etc. Active mitigation systems are not allowed to be considered for worst-case scenarios.

4. Release Rates for Worst-Case Scenarios

Toxic Substances

Toxic Gases (Normally Gases at Ambient Temperature)

Toxic gases include all regulated toxic substances that are gases at ambient temperature (temperature 25°C, 77°F). For consequence analysis, a gaseous release of the total quantity is assumed to occur in 10 minutes. The release rate shall be assumed to be the total quantity divided by 10.

Toxic Gases (Refrigerated Liquids at Ambient Pressure)

For regulated toxic substances handled as refrigerated liquids at ambient pressure, if the released regulated toxic substance is not contained by passive mitigation systems or if the contained pool would have a depth of 1 centimeter or less, you must assume that the regulated toxic substance is released as a gas in 10 minutes. If the released regulated toxic substance is contained by passive mitigation systems in a pool with a depth greater than 1 centimeter (0.39-inch), you may assume that the quantity of regulated toxic substance is spilled instantaneously to form a liquid pool. The volatilization rate (release rate) shall be calculated at the boiling point of the regulated toxic substance.

Toxic Liquids

For regulated toxic substances handled as liquids, the total quantity in a vessel is assumed to be spilled onto a flat, non-absorbing surface. (NOTE: if the release would occur onto a surface that is not paved or smooth, you may take into account the actual surface characteristics). For toxic liquids carried in pipelines, the quantity that may be released from the pipeline is assumed to form a pool.

The surface area of the pool shall be determined by assuming that the liquid spreads to 1 centimeter (0.39-inch) unless passive mitigation systems are in place that serve to contain the spill and limit the surface area. Where passive mitigation is in place, the surface area of the contained liquid shall be used to calculate the volatilization rate.

The volatilization rate shall account for the highest daily maximum temperature occurring in the past three years, the temperature of the substance in the vessel, and the concentration of the substance if the liquid spilled is a mixture or solution.

The rate of release to air shall be determined from the volatilization rate of the liquid pool. You may use the methodology in USEPA's *"RMP Offsite Consequence Analysis Guidance"* or any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices.

Flammables
For regulated flammable substances, including both flammable gases and volatile flammable liquids, the worst-case release is assumed to result in a vapor cloud containing the total quantity of the regulated substance that could be released from a vessel or pipeline. The entire quantity of the cloud is assumed to be between the upper and lower flammable limits of the regulated substance. A yield rate of 10 percent of the available energy released in the explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT-equivalent methods.

Required Parameters for Modeling a Worst Case Scenario

Endpoints

Toxic
The toxic endpoints to be used in a worst-case analysis shall be taken from the most current Tables listed in Section 2770.5 of Title 19 CCR.

Flammables
The flammable endpoint to be used in a worst-case analysis is an overpressure of 1 pound per square inch (psi). This endpoint was chosen by USEPA as the threshold for potential serious injuries to people as a result of property damage caused by an explosion (e.g., injuries from flying glass from shattered windows or falling debris from damaged houses).

Wind Speed/Atmospheric Stability
For worst-case analysis use a wind speed of 1.5 meters per second and an F atmospheric stability class unless you can demonstrate that local meteorological data applicable to the site show a higher minimum wind speed or less stable atmosphere at all times during the previous three years.

Ambient Temperature/Humidity
For worst-case analysis of regulated toxic substances use the highest daily maximum temperature in the previous three years and average humidity for the site, based on temperature/humidity data gathered at the stationary source or at a local meteorological station. If you use 25°C and 50% humidity as values for these variable if you are using the USEPA's RMP Offsite Consequence Analysis Guidance as your air model.

Height of Release
For worst-case analysis of regulated toxic substances assume a ground level (0 feet) release.

Surface Roughness (Topography)
For worst-case analysis use either urban or rural topography, as appropriate. Urban means that there are many obstacles in the immediate area and the terrain is generally flat and unobstructed. Rural means there are no buildings in the immediate area and the terrain is generally flat and unobstructed.

Dense or Neutrally Buoyant Gases
For worst-case analysis tables or models used for dispersion of regulated toxic substances must appropriately account for gas density.

Temperature of the Released Substance
For worst-case analysis consider liquids (other than gases liquefied by refrigeration) to be released at the highest daily maximum temperature, based on data for the previous three years, or at process temperature, whichever is higher. Assume gases liquefied by refrigeration at atmospheric pressure are released at their boiling points.

D. Alternative Release Scenario Analysis

1. Selecting Alternative Release Scenarios

You are required to analyze at least one alternative release scenario for each listed regulated toxic substance you have in a Program 2 or Program 3 process above its threshold quantity. You are also required to analyze one alternative release scenario to represent all regulated flammable substances covered in your Program 2 or Program 3 processes. You do not need to analyze an alternative release scenario for each regulated flammable substance. For example, if you have five regulated substances – ammonia, chlorine, hydrogen chloride, acetylene, and propane – above the threshold quantity in either Program 2 or Program 3 processes, you will need to analyze one alternative scenario each for ammonia, chlorine, and hydrogen chloride; and a single alternative scenario to cover both acetylene and propane.

For alternative release scenarios, you are allowed to consider active mitigation systems, such as interlocks, shutdown systems, pressure relieving devices, flares, emergency isolation systems, and fire sprinkler and deluge systems, as well as passive mitigation systems.

Alternative Release Scenarios for Regulated Toxic Substances
Alternative release scenarios for regulated toxic substances should be those that will reach an endpoint offsite, unless no such scenario exists. Those releases that have the potential to reach the public are of the greatest concern.

You should consider the following when selecting an alternative release scenario:

- You may use your worst-case release scenario and apply your active mitigation system to limit the quantity released and the duration of the release.
- You may use information from your *process hazard analysis.
- You may use an actual event based on your five-year accident history review.
- You may use an actual event based on industry accident history as it relates to your process.

*If you use information for your process hazard analysis to select your alternative scenario, you should at a minimum consider the following: (a) transfer hose releases due to splits or sudden hose uncoupling; (b) process piping releases from failures at flanges, joints, welds, valves, and valve seals, and drains or bleeds; (c) process vessel or pump releases due to cracks, seal failure, or drain, bleed, or plug failure; (d) vessel overfilling and spill, or over pressurization an venting through relief valves or rupture disks; and (e) shipping containers mishandling and breakage or puncturing leading to a spill. In addition, if you use your process hazard analysis to select an alternative scenario, you must justify your choice either qualitatively or quantitatively.

Alternative Scenarios for Regulated Flammable Substances

Alternative release scenarios for regulated flammable substances are somewhat more complicated than those release scenarios for regulated toxic substances because the consequences of a release and the endpoint of concern may vary. For the worst-case, the consequence of concern is a vapor cloud explosion, with an overpressure endpoint. For alternative scenarios (e.g., fires), other endpoints (e.g., heat radiation) may need to be considered. Possible scenarios to consider that would involve regulated flammable substances include:

- Vapor cloud fires (flash fires) resulting from dispersion of a cloud of flammable vapor and ignition of the cloud following dispersion. Such a fire could flash back and could represent a severe heat radiation hazard to anyone in the area of the cloud.
- A pool fire, with potential radiant heat effects, resulting from a spill of a flammable liquid.
- A boiling liquid, expanding vapor explosion (BLEVE), leading to a fireball that may produce intense heat and may occur if a vessel containing a flammable material ruptures explosively as a result of exposure to fire. Heat radiation from the fireball is the primary hazard; vessel fragments and overpressure from the explosion also can result. BLEVEs are generally considered unlikely events.

2. Release Rates for Alternative Scenarios

Refer to USEPA's "RMP Offsite Consequence Analysis Guidance" to determine appropriate release rates.

3. Required Parameters for Modeling an Alternative Scenario

Endpoints

Toxic
The toxic endpoints to be used in a worst-case analysis shall be taken from the most current Tables listed in Section 2770.5 of Title 19 CCR.

Flammables
The flammable endpoint to be used in an alternative analysis varies according to the scenarios studied and may be one of the following: (a) an overpressure of 1 pound per square inch (psi); (b) a radiant heat level of 5 kilowatts per square meter (kW/m^2) for 40 seconds for heat from fires (or equivalent

dose); or (c) lower flammability limit (LFL) as specified in NFPA documents or other generally recognized sources.

Wind Speed/Atmospheric Stability
For site-specific modeling, use typical meteorological conditions for your site. If you use USEPA's *"RMP Offsite Consequence Analysis Guidance"* you may assume wind speed of 3 meters per second and a D atmospheric stability class.

Ambient Temperature/Humidity
For site-specific modeling, use average temperature/humidity data gathered at the site or at a local meteorological station. Assume 25°C and 50% humidity as values if you are using the USEPA's *"RMP Offsite Consequence Analysis Guidance"* as your air model.

Height of Release
Release height may be determined by the release scenario or by assuming ground level.

Surface Roughness (Topography)
Use either urban or rural topography, as appropriate. Urban means that there are many obstacles in the immediate area and the terrain is generally flat and unobstructed. Rural means there are no buildings in the immediate area and the terrain is generally flat and unobstructed.

Dense or Neutrally Buoyant Gases
Tables or models used for dispersion of regulated toxic substances must appropriately account for gas density.

Temperature of the Released Substance
Substances may be considered to be released at a process or ambient temperature that is appropriate to the scenario. If you are using the USEPA's *"RMP Offsite Consequence Analysis Guidance"* as your air model 25°C or the boiling point of the released substance may be used.

E. Defining Offsite Impacts to the Population/Environment

For each release scenario, estimate the population within a circle (zone of vulnerability) with its center at the point of the release and a radius determined by the distance to the endpoint. Population shall include residential population. To

estimate the population potentially affected, use the most recent Census data, or other more accurate information if it is available. Population data shall be estimated to two significant digits.

Include also within the zone of vulnerability the presence of any schools, hospitals, long-term health care facilities, child day care facilities, and prisons. Also identify and list any environmental receptors, parks and recreational areas, major commercial, office, and industrial buildings. Environmental receptors can be determined from local United States Geological Survey (USGS) maps.

F. Offsite Consequence Analysis Technical Document

The following records shall be maintained on the offsite consequence analyses in a Technical Document. This Technical Document will be subject to submittal upon HMD's request and/or by onsite auditing by HMD:

1. Include a table of contents.

2. Place divider tabs between sections of the OCA.

3. For the worst-case scenarios, describe the vessel or pipeline and substance selected as worst-case, assumptions and parameters used, and the rationale for selection. Assumptions should include any passive mitigation that was assumed to limit the quantity that could be released.

4. For the alternative release scenarios, describe the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios. Assumptions shall include use of any active and passive mitigation that was assumed to limit the quantity that could be released

5. Include the same information required in the RMP Public Document in this section.

6. If using a computer air model, include the computer-generated runs of the scenario(s). Be prepared to provide a copy of the air modeling software if not using the available USEPA RMP Comp or ALOHA.

II.a. PREVENTION PROGRAM 2

Most Program 2 processes are likely to be relatively simple and may be located at small businesses. EPA developed the Program 2 prevention program by identifying the basic elements that are the foundation of sound prevention practices - safety information, hazard review, operating procedures, training, maintenance, compliance audits, and accident investigation. As important as each of the elements is, you will not gain the full benefit from them unless you integrate them into a risk management system that you implement on an on-going basis. For example, the hazard review must be built on the safety information; the results of the hazard review should be used to revise and update operating and maintenance procedures. Workers must be trained in these procedures and must use them every day.

There are seven elements in the Program 2 prevention program found in Article 5 of Title 19 CCR.

SUMMARY OF PROGRAM 2 PREVENTION PROGRAM

Subpart C of Title 19	Section Title
Section 2755.1	Safety Information
Section 2755.2	Hazard Review
Section 2755.3	Operating Procedures
Section 2755.4	Training
Section 2755.5	Maintenance
Section 2755.6	Compliance Audits
Section 2755.7	Incident Investigation

You must integrate these seven elements into a risk management program that you and your employees implement on a daily basis. Understanding and managing risks must become part of the way you operate. Doing so will provide benefits beyond accident prevention as well. Preventive maintenance and routine inspections will lessen the number of equipment failures and down time; well trained workers, aware of optimum operating parameters, will allow you to gain the most efficient use of your substances.

A. SAFETY INFORMATION

You must compile and maintain safety information related to the regulated substances and process equipment for each Program 2 process. You probably have much of this information already, because you would have developed it to comply with OSHA or other rules. EPA has limited the information to what is likely to apply to the processes covered under the Program 2 program.

SAFETY INFORMATION REQUIREMENTS

Information you must compile and maintain:	You must ensure:	You must update the safety information if:
✓ Material Safety Data Sheets ✓ Maximum intended inventory ✓ Safe upper and lower parameters ✓ Equipment specifications ✓ Codes & standards used to design, build, and operate the process.	✓ That the process is designed in compliance with recognized codes and standards	✓ There is a major change at your business that makes the safety information inaccurate

After you have documented your safety information, you should double-check it to be sure that the files you have reflect the equipment you are currently using. It is important to keep this information up to date. Whenever you replace equipment, be sure that you put the new equipment specifications in the file and consider whether any of your other prevention elements need to be reviewed to reflect the new equipment.

B. HAZARD REVIEW

You do not have to perform a full Process Hazard Analysis for a Program 2 process, but you must conduct a hazard review. The hazard review will help you determine whether you're meeting applicable codes and standards, identify and evaluate the types of potential failures, and focus your emergency response planning efforts. The hazard review is key to

understanding your operation and continuing to operate safely. You must identify and review specific hazards and safeguards of your Program 2 processes. The HMD requires at a minimum a "What-If" hazard evaluation as the hazard review methodology for Program 2 processes.

HAZARD REVIEW REQUIREMENTS

Conduct a review & identify...	Use a guide for conducting the review	Document results & resolve problems	Update your hazard review
✓ The hazards associated with the Program 2 process & regulated substances. ✓ Opportunities for equipment malfunction or human error that could cause a release. ✓ Safeguards that will control the hazards or prevent the malfunction or error. ✓ Steps to detect or monitor releases.	✓ You may use any what-if/checklist (such as you might in a model risk management program) to conduct the review. ✓ For a process designed to industry standards like NFPA-58 or Federal/state design rules, check the equipment to make sure that it's fabricated, installed and operated properly.	✓ Your hazard review must be documented and you must show that you have addressed problems.	✓ You must update your review at least once every five years or whenever there is a major change in the process. ✓ You must resolve problems identified in the new review before you startup the changed process.

Record the Results

The team scribe should record the results during the "What-If" Hazard Evaluation process. An example of the recording format is attached in **Appendix**.

"What-If" Hazard Evaluation Document

The Hazard Evaluation Document **shall include the following:**

- Include a table of contents.
- Place dividers and tabs between the sections of the "What-If" Hazard Evaluation document
- Describe the regulated substance process(es) studied including a review of the chemistry and chemical reactions that take place in the system.
- Provide a copy of the process flow diagram and color code regulated substance lines.
- List the individual pieces of equipment (i.e. pumps, reactors, heat exchangers, etc.) and piping that were studied.
- Provide a copy of the "What-If" questions used in the evaluation.
- Provide copies of the "What-If" session worksheets.
- Include a table of the individuals involved in the "What-If" Hazard

Evaluation and the role of each individual.

- Include a table of all the procedures reviewed during the "What-If" Hazard Evaluation.
- Include a table of all the documents reviewed during the "What-If" Hazard Evaluation.
- Define the extent of on-site interviewing of operators used to estimate human/operator error probabilities.
- Describe the database or sources used to estimate equipment failure.
- Provide a table of all the recommendations from the "What-If" Hazard Evaluation by individual equipment according to process flow and in order of priority. Separate the recommendations that will be addressed from those that will not be addressed. For all recommendations that will not be addressed explain why they will not be addressed.
- Provide a table of references used in the hazard analysis.

C. Operating Procedures

You must prepare written operating procedures that give workers clear instruction for safely conducting activities involving a covered process. You may use standardized procedures developed by industry groups or provided in model risk management programs as the basis for your operating procedures, but be sure to check that these standard procedures are appropriate for your activities. If necessary, you must update your Program 2 operating procedures whenever there is a major change and before you start up the changed process. The following table briefly summarizes what your operating procedures must address.

OPERATING PROCEDURES REQUIREMENTS

Steps for each operating phase	Operating limits
✓ Initial startup ✓ Normal operations ✓ Temporary operations ✓ Emergency shutdown ✓ Emergency operations ✓ Normal shutdown ✓ Startup following a normal or emergency shutdown or a major change	✓ Consequences of deviating ✓ Steps to avoid, correct deviations

You must update your procedures whenever you change your process in a way that alters the steps needed to operate safely. If you add new equipment, you will need to expand your procedures or develop a separate set to cover the new items. Whenever you change your safety information you should review your procedures to be sure that they are still appropriate. Anytime you conduct a hazard review, check your operating procedures as you implement changes to address hazards.

What Kind of Documents do I have to keep?

You must maintain your current set of operating procedures. You are not required to keep old versions; in fact, you should avoid doing so because keeping copies of outdated procedures may cause confusion. You should date all procedures so you will know when they were last updated.

D. Training

Training programs often provide immediate benefits because trained workers have fewer accidents, damage less equipment, and improve operational efficiency. Training gives workers the information they need to understand how to operate safely and why safe operations are necessary. A training program, including refresher training, is the key to ensuring that the rest of your prevention program is effective. You already have some type of training program because you must conduct training to comply with OSHA's Hazard Communication standard (29 CFR 1910.1200).

The following lists things that you may find useful in developing your training program.

- **Who needs training?** Clearly identify the employees who need to be trained and the subjects to be covered.
- **What are the objectives?** Specify learning objectives, and write them in clear, measurable terms before training begins. Remember that training must address the process operating procedures.
- **How will you meet the training objectives?** Tailor the specific training modules or segments to the training objectives. Enhance learning by including hands-on training like using simulators whenever appropriate. Make the training environment as much like the working environment as you can, consistent with safety. Allow your employees to practice their skills and demonstrate what they know.
- **Is your training program working?** Evaluate your training program periodically to see if your employees have the skills and know the routines required under your operating procedures. Make sure that language or presentations are not barriers to learning. Decide how you will measure your employee's competence.
- **How will you program work for new hires and refresher training?** Make sure all workers - including maintenance and contract employees - receive initial and refresher training. If you make changes to process chemicals, equipment, and technology, make sure that involved workers understand the changes and the effects on their job.

What Kind of Documentation Do I Need to Keep?

You should keep documentation of your training program. An attendance log for any formal training courses and refresher training is required to ensure that everyone who needs to be trained is trained. Such logs will help you when you do a compliance audit.

E. Maintenance/Mechanical Integrity

You must prepare and implement procedures for maintaining the mechanical integrity of process equipment, and train your workers in the maintenance procedures. You may use procedures or instructions from equipment vendors, in Federal or State regulations, or in industry codes as the basis of your maintenance program. You should develop a schedule for inspecting and testing your equipment based on manufacturers' recommendations or your own experience. The following is a summary of the elements of a maintenance program:

Written procedures	Training	Inspection & testing
✓ You may use someone else's procedures as the basis for your program. If you choose to develop your own, you must write them down.	✓ Train process maintenance employees in process hazards and how to avoid or correct an unsafe condition. ✓ Make sure this training covers the procedures applicable to safe job performance.	✓ Inspect & test process equipment ✓ Use recognized and generally accepted good engineering practices ✓ Follow a schedule that matches the manufacturer's recommendations or that prior operating experience indicates is necessary.

What Kind of Documentation Must I Keep?
You must keep your written procedures and schedules as well as any agreements you have with contractors. You are should also keep training logs or maintenance logs. Without some record, you will have to rely on workers' memories about when something was last checked. As workers leave or change jobs at your company, it can be difficult to keep track of when inspections and tests were done. Maintaining a record of when something was last done or is scheduled to be done next can help keep your program working smoothly.

F. Compliance Audits

At least every three years, you must certify that you have evaluated compliance with the requirements for the prevention program for each covered process. At least one person on your audit team must be knowledgeable about the covered process. You must develop a report of your findings, determine and document an appropriate response to each finding, and document that you have corrected any deficiency.

What Kind of Documentation Must I Keep?
You must keep a written record of the findings and actions for five years. You may also want to keep a record of who conducted the audit, but you are not required to do this.

G. Incident Investigation

You must investigate each incident which resulted in, or could have resulted in a "catastrophic release' of a regulated substance." A catastrophic release is one that presents an imminent and substantial endangerment to public health and the environment. The following table briefly summarizes the steps you must take for investigating incidents. You should also consider investigating minor accidents or near misses because they may help you identify problems that could lead to more serious accidents.

INCIDENT INVESTIGATION REQUIREMENTS

✓ Initiate an investigation promptly.	Begin investigating no later than 48 hours following the incident.
✓ Summarize the investigation in a report.	Among other things, this report will include the factors contributing to the incident. Remember that identifying the root cause may be more important than identifying the initiating event. Remember, also, that the purpose of the report is to help management take corrective action.
✓ Address the team's findings and recommendations	Establish a system to address the incident report findings and recommendations and document resolutions and corrective actions.
✓ Review the report with your staff and contractors	You must share the report - its findings and recommendations - with affected workers whose job tasks are relevant to the incident.
✓ Retain the report.	Keep incident investigation summaries for five years.

What Kind of Documentation Must I Keep:
You must maintain the summary of the accident, recommendations, and actions. A sample format is found in the **Appendices**. Note that the form also includes accident data that you will need for the five-year accident history. These data are not necessarily part of the incident investigation report, but including them will create a record you can use later to create the accident history.

II.b. PREVENTION PROGRAM 3

If you already have the OSHA Process Safety Management (PSM) program in place you will need to do little that's new to comply with the Program 3 prevention program. Whether you're building on to the PSM standard or creating a new program, keep these things in mind.

- CalARP and OSHA have different authority. If you are already complying with the PSM standard, your Process Hazard Analysis (PHA) team may have to assess new hazards that could affect the public or the environment offsite. Protection measures that are suitable for workers may be the very kind of thing that imperils the public.
- Integrate the elements of your prevention program. You must ensure that a change in any single element of your program leads to a review of other elements to identify any effect caused by the change.
- Most importantly, make accident prevention an institution at your site. Like the entire risk management program, a prevention program is more than a collection of written documents. It is a way to make safe operations and accident prevention the way you do business everyday.

There are twelve elements in the Program 3 prevention program. Two OSHA elements are not included. Emergency Response is dealt with separately in CalARP; the OSHA Trade Secrets requirement (provision of trade secret information to employees) is beyond the CalARP statutory authority.

SUMMARY OF PROGRAM 3 PREVENTION PROGRAM

Section	Title	OSHA PSM Reference
Section 2760.1	Process Safety Information	PSM Standard Section 1910.119(d)

Section 2760.2	Process Hazard Analysis (PHA)	PSM Standard Section 1910.119(e)
Section 2760.3	Operating Procedures	PSM Standard Section 1910.119(f)
Section 2760.4	Training	PSM Standard Section 1910.119(g)
Section 2760.5	Mechanical Integrity	PSM Standard Section 1910.119(j)
Section 2760.6	Management of Change	PSM Standard Section 1910.119(l)
Section 2760.7	Pre-Startup Review	PSM Standard Section 1910.119(i)
Section 2760.8	Compliance Audits	PSM Standard Section 1910.119(o)
Section 2760.9	Incident Investigation	PSM Standard Section 1910.119(m)
Section 2760.10	Employee Participation	PSM Standard Section 1910.119(c)
Section 2760.11	Hot Work Permits	PSM Standard Section 1910.119(k)
Section 2760.12	Contractors	PSM Standard Section 1910.119(h)

A. Process Safety Information

The following table summarizes the safety information requirements.

PROCESS SAFETY INFORMATION

For chemicals, you must complete information on:	**For process technology, you must provide:**	**For equipment in the process, you must include:**
✓ Toxicity ✓ Permissible exposure limits ✓ Physical data ✓ Reactivity ✓ Corrosivity ✓ Thermal & chemical stability ✓ Hazardous effects you can foresee if you mixed materials together accidentally	✓ A block diagram or simplified process flow diagram ✓ Information on process chemistry ✓ Maximum intended inventory of the CalARP-regulated chemical ✓ Safe upper & lower limits for such items as temperature, pressure, flows, or composition ✓ An evaluation of the consequences of deviation	✓ Materials of construction ✓ Piping & instrumentation diagrams (P&IDs) ✓ Electrical classification ✓ Relief system design & design basis ✓ Ventilation system design ✓ Design codes & standards employed ✓ Safety systems

B. Process Hazard Analysis

A process hazard analysis (PHA), sometimes called a process hazard evaluation, is one of the most important elements of the process safety management program. A PHA is an organized and systematic effort to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals. A PHA provides information that will assist employers and employees in making decisions for improving safety and reducing the consequences of unwanted or unplanned releases of hazardous chemicals.

A PHA is directed toward analyzing potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals. The PHA focuses on equipment, instrumentation, utilities, human actions (routine and non-routine), and external factors that might impact the process. These considerations assist in determining the hazards and potential failure points or failure modes in a process.

Selection of a PHA methodology
In San Diego County most facilities that conducted a PHA under the previous Risk Management and Prevention Program used either a What-If/Checklist method or Hazard and Operability Analysis (HAZOP). For more detailed information regarding these techniques refer to *"Guidelines for Hazard Evaluation Procedures, 2nd Ed."*, published by Center for Chemical Process Safety of the American Institute of Chemical Engineers.

Offsite impacts
You must consider offsite impacts when you conduct a PHA under CalARP. A well-done PHA should identify all failure scenarios that could lead to significant exposure of workers, the public, or the environment. The only issue that is likely to require consideration above what you have done already for the PSM standard is whether any protection measures that were adequate for worker safety are inadequate for public and environmental safety.

Consider two circumstances - one where PSM and the risk management program rule should lead to the same result, and another where protecting workers could mean endangering the public and the environment. For flammables, any scenario that could affect the public almost certainly would have the potential to affect workers; measures taken to protect your employees likely will protect the public and the environment. On the other hand, for toxics under PSM, you may plan to address a loss of containment by venting toxic vapors to the outside air. In each circumstance, a PHA should define the failure sequence. However, for toxics, the PHA team must reassess venting as an appropriate mitigation measure.

Rejecting team recommendations
You may not always agree with your PHA team's recommendations and may wish to reject a recommendation. You may decline a team recommendation if you can document one of the following: (1) the analyses upon which the recommendations are based contain factual errors; (2) the recommendation is not necessary to protect the health of employees or contractors; (3) an alternative measure would provide a sufficient level of protection; or (4) the recommendation is infeasible.

Updating and revalidating your PHA
For CalARP, you must complete the initial PHA for each Program 3 process not later than June 21, 1999, and update it at least once every five years. You may complete an initial PHA before that date. You may use an OSHA PHA as your initial PHA, and update and revalidate it every five years on the OSHA schedule.

Revising your PHA
You should revise your PHA whenever there is a new hazard or risk created by changes to your process. Such changes might include introducing a new process, process equipment, or regulated substance; altering process chemistry that results in any change to safe operating limits; or other alteration that introduces a new hazard. However, EPA recommends that you consider revising your PHA whenever adjoining processes create a hazard. Remember that you have a general duty to prevent accidents and ensure safety at your source, which may require you to take steps beyond those explicitly, specified in the risk management program rule.

C. Operating Procedures

You must prepare written operating procedures that give workers clear instruction for safely conducting activities involving a covered process. You may use standardized procedures developed by industry groups or provided in model risk management programs as the basis for your operating procedures, but be sure to check that these standard procedures are appropriate for your activities. If necessary, you must update your Program 3 operating procedures whenever there is a major change and before you startup the changed process. The following table briefly summarizes what your operating procedures must address:

OPERATING PROCEDURES REQUIREMENTS

Steps for each operating phase	Operating limits	Safety & health considerations	Safety systems & their functions
✓ Initial start-up ✓ Normal operations ✓ Temporary operations ✓ Emergency shutdown ✓ Normal shutdown ✓ Start-up following a turnaround or emergency shutdown	✓ Consequences of deviating ✓ Steps to avoid, correct deviations	✓ Chemical properties & hazards ✓ Precautions for preventing chemical exposure ✓ Control measures for exposure ✓ QC for raw materials and chemical inventory ✓ Special or unique hazards	✓ Address whatever is applicable

You must update your procedures whenever you change your process in a way that alters the steps needed to operate safely. If you add new equipment, you will need to expand your procedures or develop a separate set to cover the new items. Whenever you change your safety information you should review your procedures to be sure that they are still appropriate. Anytime you conduct a hazard review, check your operating procedures as you implement changes to address hazards.

What Kind of Documents do I have to keep?
You must maintain your current set of operating procedures. You are not required to keep old versions; in fact, you should avoid doing so **because** keeping copies of outdated procedures may cause confusion. You **should date** all procedures so you will know when they were last updated.

D. Training

Training programs often provide immediate benefits because trained workers have fewer accidents, damage less equipment, and improve operational efficiency. Training gives workers the information they need to understand how to operate safely and why safe operations are necessary. A training program, including refresher training, is the key to ensuring that the rest of your prevention program is effective.

The following lists things that you may find useful in developing your training program:

- **Who needs training?** Clearly identify the employees who need to be trained and the subjects to be covered.
- **What are the objectives?** Specify learning objectives, and write them in clear, measurable terms before training begins. Remember that training must address the process operating procedures.

- **How will you meet the training objectives?** Tailor the specific training modules or segments to the training objectives. Enhance learning by including hands-on training like using simulators whenever appropriate. Make the training environment as much like the working environment as you can, consistent with safety. Allow your employees to practice their skills and demonstrate what they know.
- **Is your training program working?** Evaluate your training program periodically to see if your employees have the skills and know the routines required under your operating procedures. Make sure that language or presentations are not barriers to learning. Decide how you will measure your employee's competence.
- **How will you program work for new hires and refresher training?** Make sure all workers - including maintenance and contract employees - receive initial and refresher training. If you make changes to process chemicals, equipment, and technology, make sure that involved workers understand the changes and the effects on their job. Careful consideration must be given to assure that employees including maintenance and contract employees receive current and updated training.

What Kind of Documentation Do I Need to Keep?
You should keep documentation of your training program. An attendance log for any formal training courses and refresher training is required to ensure that everyone who needs to be trained is trained. Such logs will help you when you do a compliance audit.

E. Mechanical Integrity

You must have a mechanical integrity program for pressure vessels and storage tanks, piping systems, relief and vent systems and devices, emergency shutdown systems, controls, and pumps. The following table summarizes other requirements of a mechanical integrity program.

MECHANICAL INTEGRITY

Written procedures	Training	Inspection & testing	Equipment deficiencies	Quality assurance

✓ Establish & implement written procedures to maintain the integrity of process equipment	✓ Train process maintenance employees in an overview of the process and its hazards. ✓ Make sure this training covers the procedures applicable to safe job performance	✓ Inspect & test process equipment ✓ Use recognized and generally accepted good engineering practices ✓ Follow a schedule that matches the manufacturer's recommendations or that prior operating experience indicates is necessary ✓ Document each inspection & test	✓ Correct equipment deficiencies before further uses of process equipment or whenever necessary to ensure safety	✓ Establish a QA program for new construction & equipment, newly installed equipment, maintenance materials, and spare parts & equipment

What Kind of Documentation Must I Keep?

You must keep your written procedures and schedules as well as any agreements you have with contractors. You are should also keep training logs, inspection & testing logs, and maintenance logs. Without some record, you will have to rely on workers' memories about when something was last checked. As workers leave or change jobs at your company, it can be difficult to keep track of when inspections and tests were done. Maintaining a record of when something was last done or is scheduled to be done next can help keep your program working smoothly.

F. Management of Change

The following table summarizes the Management of Change requirements:

MANAGEMENT OF CHANGE (MOC) REQUIREMENTS

MOC procedures must address:	Employees affected by the change must:	Update process safety information if:	Update operating procedures if:
✓ Technical basis for the change ✓ Impact on safety and health ✓ Modifications to operating procedures ✓ Necessary time period for the change	✓ Be informed of the change before startup ✓ Trained in the change before startup	✓ A change covered by MOC procedures result in a change in any PSI required under EPA's rule	✓ A change covered by MOC procedures results in a change in any operating procedure required under EPA's rule

To properly manage changes to process chemicals, technology, equipment and facilities, one must define what is meant by change. In this process safety management standard, change includes all modifications to equipment, procedures, raw materials and processing conditions other than "replacement in kind." Copies of process changes need to be kept in an accessible location to ensure that design changes are available to operating personnel as well as to PHA

team members when a PHA is being done or one is being updated.

G. Pre-Startup Review

You must conduct a pre-startup review before you introduce a regulated substance into a process. The following table lists items you must address.

PRE-STARTUP REVIEW REQUIREMENTS

Design Specifications	Adequate Procedures	Training
✓ Confirm that new or modified construction and equipment meet design specifications	✓ Ensure that procedures for safety, operating, maintenance, and emergencies are adequate and in place	✓ Confirm that each employee involved in the process has been trained completely

New Processes
The initial startup procedures and normal operating procedures need to be fully evaluated as part of the pre-startup review to assure a safe transfer into the normal operating mode for meeting the process parameters.

Existing Processes
For existing processes that have been shutdown for turnaround, or modification, etc., the employer must assure that any changes other than "replacement in kind" made to the process during shutdown go through the management of change procedures. P&IDS will need to be updated as necessary, as well as operating procedures and instructions. If the changes made to the process during shutdown are significant and impact the training program, then operating personnel as well as employees engaged in routine and non-routine work in the process area may need some refresher or additional training in light of the changes. Any incident investigation recommendations, compliance audits or PHA recommendations need to be reviewed as well to see what impacts they may have on the process before beginning the startup.

F. Compliance Audits

At least every three years, you must certify that you have evaluated compliance with the requirements for the prevention program for each covered process. At least one person on your audit team must be knowledgeable about the covered process. You must develop a report of your findings, determine and document an appropriate response to each finding, and document that you have corrected any deficiency.

What Kind of Documentation Must I Keep?
You must keep a written record of the findings and actions for five years. You may also want to keep a record of who conducted the audit, but you are not required to do this.

G. Incident Investigation

You must investigate each incident that resulted in, or could have resulted in a "catastrophic release of a regulated substance." A catastrophic release is one that presents an imminent and substantial endangerment to public health and the environment. Although the CalARP requires you to investigate only those incidents that resulted in, or could reasonably have resulted in a catastrophic release, you are encouraged to investigate all accidental releases. Investigating minor accidents or near misses can help you identify problems that could result in major releases if not addressed.

The following is a summary of the steps you must take for investigating an incident:

- Initiate the investigation promptly. Begin investigating no later than 48 hours following the incident.
- Establish a knowledgeable investigation team. Establish an investigation team to gather the facts, analyze the event, and develop the "how" and "why" of what went wrong. At least one team member must have knowledge of the process. Consider adding other workers familiar with the process to the incident team. Their additional knowledge will assist in the fullest insight into the incident.
- Summarize the investigation in report. Among other things, this report will include the factors contributing to the incident. Remember that identifying the root cause may be more important than identifying the initiating event. Also, remember that the purpose of the report is to help management take corrective action.
- Address the team's findings and recommendations. Establish a system to address the incident report findings and recommendations and document resolutions and corrective actions.
- Review the report with your staff and contractors. You must share the report –its findings and recommendations- with affected workers whose job tasks are relevant to the incident.
- Retain the report. Keep incident investigation reports for five years.

H. Employee Participation

Section 2760.10 in Title 19 of the California Code of Regulations states that employers are to consult with their employees and their representatives regarding the employers efforts in the development and implementation of the process safety management program elements and hazard assessments. Many employers, under their safety and health programs, have already established means and methods to keep employees and their representatives informed about relevant safety and health issues and employers may be able to adapt these practices and procedures to meet their obligations under this section. Employers who have not implemented an occupational safety and health program may wish to form a safety and health committee of employees and management representatives to help the employer meet the obligations specified by this standard. This committee can become a significant ally in helping the employer to implement and maintain an effective process safety management program for all employees.

The following is a summary of what you must do:

- Write a plan. Develop a written plan of action regarding how you will implement employee participation.
- Consult with employees. Consult your employees and their representatives regarding conducting and developing PHAs and other elements of process safety management and the risk management program.
- Provide access to information. Ensure that your employees and their representatives have access to PHAs and all other information required under the CalARP.

I. Hot Work Permits

Non-routine work that is conducted in process areas needs to be controlled by the employer in a consistent manner. The hazards identified involving the work that is to be accomplished must be communicated to those doing the work, but also to those operating personnel whose work

could affect the safety of the process. A work authorization notice or permit must have a procedure that describes the steps the maintenance supervisor, contractor representative or other person needs to follow to obtain the necessary clearance to get the job started. The work authorization procedures need to reference and coordinate, as applicable, lockout/tagout procedures, line breaking procedures, confined space entry procedures and hot work authorizations. This procedure also needs to provide clear steps to follow once the job is completed. These steps must provide closure for those that need to know the job is now completed and equipment can be returned too normal.

The following summarizes how to meet the hot work permit requirements:

- Issue a hot work permit. You must issue this permit for hot work conducted on or near a covered process
- Implement fire prevention and protection. You must ensure that the fire prevention and protection requirements in 8 CCR 5189 are implemented before the hot work begins. The permit must document this.
- Indicate the appropriate dates. The permit should indicate the dates authorized for hot work.
- Identify the work. The permit must identify the object on which hot work is to be performed.
- Maintain the permit on file. You must keep the permit on file until workers have completed the hot work operations

J. Contractors

Employers, who use contractors to perform work in and around processes that involve highly hazardous chemicals, will need to establish a screening process so that they hire and use contractors who accomplish the desired job tasks without compromising the safety and health of employees at a facility. For contractors, whose safety performance on the job is not known to the hiring employer, the employer will need to obtain information on injury and illness rates and experience and should obtain contractor references. Additionally, the employer must assure that the contractor has the appropriate job skills, knowledge and certifications (such as for pressure vessel welders). Contractor work methods and experiences should be evaluated.

Contract employees must perform their work safely. Considering that contractors often perform very specialized and potentially hazardous tasks such as confined space entry activities and non-routine repair activities it is quite important that their activities be controlled while they are working on or near a covered process. A permit system or work authorization system for these activities would also be helpful to all affected employers. The use of a work authorization system keeps an employer informed of contract employee activities, and as a benefit the employer will have better coordination and more management control over the work being performed in the process area. A well run and well maintained process where employee safety is fully recognized will benefit all of those who work in the facility whether they be contract employees or employees of the owner.

The HMD has no authority to require that you maintain an occupational injury and illness log for contract employees. Be aware, however, that OSHA does have this authority, and that the PSM standard does set this requirement.

The following table summarizes both yours and the contractors' responsibilities:

You must:	Your contractor must:

✓ **Check safety performance.** You must evaluate the safety performance of the contractor ✓ **Provide safety and hazard information.** You must inform the contractor of potential fire, explosion or toxic release hazards; and of your emergency response activities as they relate to the contractor's work and the process. ✓ **Ensure safe practices.** You must assure that you have safe work practices such as controlling the entrance, presence, and exit of contract employees in covered process areas. ✓ **Verify that the contractor acts responsibly.** You must verify that the contractor is fulfilling its responsibility to provide appropriate health, safety, and craft training.	✓ **Ensure training for its employees.** The contractor must train and supervise contract employees to ensure that they perform their jobs safely and in accordance with your source's safety procedures. ✓ **Ensure its employees know process hazards and applicable emergency actions.** The contractor must assure that contract employees are aware of hazards and emergency procedures relating to the employees' work ✓ **Document training.** The contractor must prepare a record documenting and verifying adequate employee training. ✓ **Inform you of hazards.** The contractor must tell you of any unique hazards presented by its work or of any hazards it finds during performance.

III. EXTERNAL EVENTS

For Program 2 and Program 3 processes you must evaluate as part of your Process Hazardous Analysis (PHA) or Hazard Review any potential natural or human caused external events. At a minimum a seismic analysis must be performed. The following are guidelines to use when conducting a seismic analysis.

A. Seismic Analysis General Requirements

The primary purpose of a seismic analysis is to determine types of regulated substance (RS) releases that might occur due to an earthquake. These guidelines have been developed for businesses that have a relatively simple process. In general, the approach toward seismic analysis should be qualitative unless findings indicate the need for further evaluation by an experienced structural engineer.

The evaluation should be geared towards finding, evaluating, and, if necessary, strengthening governing elements in the process system. Emphasis should be placed on pipes and hoses. Visually inspect the piping system of concern to evaluate flexibility, support, and guide adequate reinforcement. Many of the failures can be traced to one of the following causes:

- Lack of flexibility between piping anchor points. In earthquakes, vessel and piping anchor points can grossly displace relative to each other.
- Branch lines do not have adequate flexibility to accommodate seismic movement of the main line.
- Lack of adequate piping guides or lateral restraints allows a pipe to slide off its supports.

- Lack of reinforcement between branch lines and the main header.

B. Seismic Analysis Resource

The HMD recommends that facilities conducting a California Accidental Release Prevention Program (CalARP) refer to the "Manual of Techniques for Preventing or Controlling Toxic Gas Releases in Earthquakes", November 1991, Association of Bay Area Governments. This manual can be obtained by writing to ABAG Publications, P.O. Box 2050, Oakland, CA 94604-2050. The cost is about $20.

This manual can be used by your business to evaluate the potential of an earthquake to cause RS accidental releases and to assist you business in determining appropriate mitigation measures to prevent and/or minimize those potential RS accidental releases. The manual is divided into three sets of issue sheets, (1) Nonstructural Issue Sheets; (2) Emergency Issue Sheets; and (3) General Issue Sheets. An example of an issue sheet can be found in Appendix h 1-5. Because not all the issue sheets may be pertinent to your business, the HMD has developed an accompanying checklist to assist you in determining which issue sheets to review. This checklist is can be found in the Appendix. Complete the checklist and submit it to the HMD to receive the appropriate seismic issue sheets for your facility. The seismic issue sheets can then be used to conduct you RS Seismic Analysis.

Note: The HMD has also developed Seismic Walkdown Checklists that may also be used by more experienced engineers for conducting a qualitative seismic analysis of complex processes. **See Appendices.**

C. External Event Documentation

The following external event records shall be maintained in a Technical Document. This Technical Document will be subject to submittal upon HMD's request and/or onsite auditing by HMD:

1. Include a table of contents.

2. Place dividers and tabs between the sections of the document.

3. Describe the types of external events (other than a seismic analysis) that were evaluated and any potential RS releases that likely could occur; emergency mitigation systems and measures in place; and recommended mitigation or measures that will be implemented to reduce the likelihood of a release.

4. For the seismic analysis list:

   - Any buildings and structures that were evaluated.
   - All the nonstructural components (i.e., piping, tanks, etc.) that were evaluated.
   - Any potential RS releases.
   - The emergency mitigation systems and measures in place to prevent a RS release should an earthquake occur.
   - Any recommended mitigation systems or measures that will be implemented as a result of the seismic analysis.
   - List the edition of the Uniform Building Code that was used when the process was designed.

A-1

Fee Policy

San Diego County Department of Environmental Health, Hazardous Materials Division (HMD):

Pursuant to County Ordinance 7797, Section 65.107 (h)(10), a business is charged an hour rate for all time involving consultation and Risk Management Plan (RMP) review. Businesses are billed quarterly or at a case closure, whichever comes first. Additionally hourly charges will be used to cover the costs incurred by the HMD in carrying out other elements of the California Accidental Release Prevention (CalARP) Program.

The HMD estimated the RMP review process to involve between 25 and 100 hours. The actual time involved will depend on the scope and complexity of the project. Submitting accurate, well written RMP documents following the guidance document will expedite the review process and consequently save the facility money.

After the RMP review is completed, Program Level I facilities are subject to an annual inspection fee along with the other HMD fees. Program Levels II and III are subject to an higher annual inspection fee.

California State Office of Emergency Services (OES)

DEH will add the State OES CalARP service fee to each stationary source subject to the CalARP Program. Service fees are required by the State and collected by the Certified Unified Program Agencies (CUPAs) and submitted to the State OES. The HMD is the CUPA for San Diego County.

If you have questions concerning the Risk Management Program fee policy, please contact the RMP Coordinator at (619) 338-2453.

A-2

Useful Web Links

Federal Industry RMP Guidance: A list of RMP guidance documents for specific businesses.
http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/EPAguidance.htm

RMP 2004 Submit link
http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/ap-rmsb.htm

California RMP Guidance: California State guidance on the CalARP program.
http://www.oes.ca.gov/Operational/OESHome.nsf/9785961716919627882 56b350061870e/452A4B2AF244158788256CFE00778375?OpenDocument

Marplot Mapping. Free mapping software from the U.S. EPA.
http://www.epa.gov/ceppo/cameo/marmaps/ca.htm

EPA RMP Comp. Free software for calculating affected areas during release scenarios.
http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/comp-dwn.htm

U.S. Census Bureau. Data for estimating populations.
http://www.census.gov/

A-3
Sample Incident Investigation
Anhydrous Ammonia Tank Release

Date: March 1, 2004 at 08:35
Substance: Anhydrous ammonia
Quantity: 350 lbs
Duration: 1 hour
Weather: Overcast, cool, approximately 55 degrees, light wind from the west at about 5 mph.
Description: During a delivery of anhydrous ammonia, the product delivery hose split and released ammonia. The delivery agent and all facility employees were away from the tank for at least 35 minutes when the release occurred. The ammonia pooled around the tank then evaporated. The ammonia spread throughout the outside of the facility and drifted to the adjacent lot, where outside workers at XXX Company were exposed to ammonia gas. The XYZ Company called 911 and sent an employee to investigate where the ammonia was coming from and notified our business of the outside ammonia release. We immediately implemented our Emergency Response Plan. All ignition sources were shut off and we called 911 to notify emergency responders of the release. The Emergency Response Team was called and they began to prepare for a response. After determining that they could approach the truck from up wind and not be exposed to over 250 ppm as measured on a Drager colorimetric tube, our response team, wearing protective clothing and proper respiratory protection, shut off the delivery valve on the ammonia truck within 15 minutes. The County Hazardous Incident Response Team (HIRT) arrived and ordered our facility and XYZ Company to evacuate upwind of the ammonia spill while the remaining ammonia evaporated into the atmosphere.

1. **Findings:** After mitigating the release, we investigated the causes. A 2-inch delivery hose had burst during the delivery causing the release. Upon closer inspection the hose was old and deteriorated. The hose was not inspected prior to use. Also, no operators or employees from our company stayed with the truck during delivery. This allowed the release to continue for a longer period of time than if an attendant were present.
2. **Recommendations:** The delivery hose needs to be inspected and replaced at regular intervals to prevent future releases. Also, higher-pressure hoses are available and should be used. Operational procedures need to be changed so that the ammonia tank and delivery truck are never left unattended during ammonia deliveries. The Emergency Response Team should always be put on alert and secure their personal equipment when ammonia deliveries occur. Investigate installing an ammonia sensor near the ammonia tank.
3. **Actions:** Replace the damaged delivery hose with a higher-pressure hose. Assure that the hose is inspected before each weekly delivery. Have one member of the Emergency Response Team put the other members on alert before the delivery begins. Assign one member of the Team to be present during the entire delivery process. Conduct emergency response refresher training with all employees. Install an ammonia sensor to warn of any ammonia leaks near the ammonia tank by July 1, 2004.

Sample Audit Checklist
For Safety Information

Element	Yes/No/NA	Action/Completion Data
MSDSs up to date?		
Maximum Inventory determined?		
Determine		
• Safe upper and lower temperature for materials		
• Safe upper and lower pressures		
• Safe process flow rates •		
• Compatible equipment with the materials used?		
Storage Tank specifications met?		
Pressure relief valves functioning?		
Emergency shut off valves present and working?		
Gauges working?		
Pumps working and serviced per manufacture's recommendations?		
Compressors serviced and functioning?		
Hoses inspected and in good repair?		
All equipment install to manufacturer's specifications and industry standards?		
Have inspections all been documented?		
Have inspections been conducted after each major change?		

A-5

Public Review

Federal Requirements

Stationary sources that are required to complete a Risk Management Plan (RMP) must submit their RMP to both the USEPA and the San Diego County Department of Environmental Health, Hazardous Materials Division (HMD). Currently the USEPA is not making RMP info available on the Internet and reviewing how to best make public information available while considering security issues.

NOTE: Stationary sources that only meet the State threshold planning quantities are not required to submit their RMP to the USEPA.

California State Requirements

California Health and Safety Code Section 25535.2 requires the HMD to make your RMP available to the public for review within 15 days after determining an initial RMP submittal to be complete. The public review comment period is for 45 days. Once an RMP is determined to be complete by the HMD, the stationary source must publish a five-day notice in a daily newspaper stating that the RMP Public Document is available for public review.

NOTE: Stationary Sources must contact the HMD prior to publishing a public notice to assure that all required information is provided in the notice.

All comments received by the HMD during the public comment period will be reviewed and considered prior to the HMD's final review of the RMP. The HMD will notify the stationary source of any deficiencies after the public review period. The stationary source will then have 30 days to correct any deficiencies noted by the HMD.

RMP Updates

When an RMP update is submitted to the HMD, the stationary source will be required to publish a one-day notice in a local newspaper with general circulation. A copy of this notice must be provided to the HMD. Again, the stationary source must contact the HMD prior to publishing the public notice to assure that all required information is provided in the notice.

A-6

PUBLIC DISCLOSURE DOCUMENT
RISK MANAGEMENT PLAN
XXXXXX COMPANY
XXXX RMP

RECORD OF REVISION

REVISION NUMBER	DATE OF CHANGE	DATE ENTERED	SIGNATURE OF PERSON ENTERING CHANGE

A-6

PUBLIC DISCLOSURE DOCUMENT
RISK MANAGEMENT PLAN
XXXXX COMPANY
XXXXX RMP

RECORD OF REVISION

To all holders of the XXXXX Company XXXXX Risk Management Plan Public Document:

Revision Number _____
Date _____

Attached are revised pages of the Public Disclosure of the Risk Management Plan for the XXXXX of which you have a copy. Please remove the old pages in your copy and replace them with the following revisions:

OLD PAGE (Page No.)	REVISED PAGE (Page No.)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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A-7

ISSUE SUMMARY: Seismic Assessment Above Ground Storage Tanks

Problem:

- Cylindrical tanks are vulnerable to several types of failure in earthquakes.
- Leaks can occur due to the failure of internal baffles.
- The top of the outside tank wall can be damaged by battering from the floating roof.
- "Elephant's foot" buckling failures at the base of tanks are caused by horizontal forces and can result in the complete loss of contents.
- Sliding is common for unanchored tanks. If there is enough flexibility in the connecting pipelines, such movement can occur without any loss of contents. However, attached pipelines often break. Even anchored tanks can move, but such movement is usually minor and rarely results in loss of contents.
- Corrosion at the base of tanks can also be a problem. In particular, "pitting corrosion" at the tank base, combined with earthquake forces, can cause the tanks to fail, losing their contents.
- Tank walls can be damaged due to inadequate detailing at connections with external pipes, valves and ladders, and due to improper welding.
- Finally, elevated tanks can topple if inadequately supported. Elevated tanks typically have more performance problems in earthquakes than ground-mounted structures.

Mitigation Options:

Increasing the thickness of tank walls at their base can be used to help prevent "elephant's foot" buckling. However, thick base walls can simply create buckling in the next higher tier of metal if that section is inadequate. Also, the upper sections of the walls can be thickened or otherwise strengthened to accommodate the forces caused by sloshing or the impact of the floating roof.

The factor of safety use in the design of tank walls containing hazardous materials is greater than for those containing water. In some instances, the safety factor for water systems may need to be increased, such as where water may be critical in an emergency or where excessive amounts of water spraying in an area could impede access to critical areas.

Tank/foundation connections should be carefully designed, particularly if associated piping is subject to failure if the tank moves. Often, the use of a larger number of smaller anchor bolts are preferable to fewer larger bolts. Additional coating can be used to help bond fiber-reinforced plastic tanks to their supports to prevent the rolling and shifting of the tank.

Particular attention should be paid to the detailing of connections with external pipes, valves and ladders, for these are frequently weak points. Welds should be inspected to make sure that weld quality and penetration are sufficient. A specific instance of concern is when piping attached to unanchored tank lacks flexibility, such as when it exits the tank and goes directly into the ground or through a wall.

Elevated tank supports can be inadequate because of the tendency to stop the leg at the tank base. Often, it is preferable to extend the support up the tank wall a foot or two and put a ring of additional material for added strength at the tank base. Adequate diagonal cross bracing should also be used on supports for these elevated tanks. If possible, such tanks should be redesigned to function without being elevated.

In addition, elevated tanks may be supported on reinforced concrete frame structures with no redundancy. These structures may be substandard, especially in the ductile detailing of the connections, and pose a significant risk of catastrophic collapse in a large earthquake. A qualified structural engineer should evaluate this type of support structure. Retrofits may include adding steel bracing.

The possibility of tall or elevated tanks falling on adjacent buildings and equipment should be a part of the decision on the design and location of those tanks.

Finally, tanks should be adequately maintained to detect corrosion and other tank deterioration before an earthquake exacerbates any problem. Particular care should be used in inspecting the bases of tanks.

SEISMIC ISSUE SHEETS CHECKLIST

Review the Seismic Issue Sheets and check the ones that are appropriate for your acutely hazardous material situation. Then use those appropriate Seismic Issue Sheets to identify ways to mitigate the potential for a release of an acutely hazardous material during an earthquake.

Nonstructural Issue Sheets		
Issue Summary	Appropriate	
	Yes	No
N-01 – Gas cylinders		
N-02 – Pressure vessels		
N-03 – Tanks-storage		
N-04 – Tanks - open-topped		
N-05 – Piping - process		
N-06 – Equipment – floor mounted		
N-07 – Equipment - suspended		
N-08 – Storage racks and shelves		
N-09 – Storage cabinets		
N-10 – Laboratory countertops		
N-11 – Countertop equipment		

Emergency Equipment Issue Sheets		
Issue Summary	Appropriate Yes	No
E-01 – Shutoff valves (flow, pressure, power, seismic)		
E-02 – Seismic detectors and alarms		
E-03 – Gas detectors and alarms		
E-04 – Ventilation systems		
E-05 – Computer control systems		
E-06 – Piping – fire sprinkler		
E-07 – Water deluge systems		
E-08 – Emergency water systems		
E-09 – Back-up power and emergency generators		
E-10 – Back-up communications		

General Issue Sheets		
Issue Summary	Appropriate	
	Yes	No
G-01 – Site ground conditions		
G-02 – Building collapse		
G-03 – Building/contents interaction		
G-04 – Audits, maintenance and testing		
G-05 – Engineering materials		
G-06 – Inventory control		
G-07 – Secondary containment		
G-08 – Chemical separation		
G-09 – Building evacuation routing issues		
G-10 – Release notifications		
G-11 – Education and training on mitigation strategies		
G-12 – Emergency response teams, training and exercises		

SEISMIC EQUIPMENT WALKDOWN CHEKLISTS

INSTRUCTIN FOR COMPLETION OF SEISMIC WALKDOEWN WORK SHEET FOR EQUIPMENT

The walkdown team shall complete each work sheet as follows:

The **Equipment Type** block shall include the type and name of equipment inspected (i.e., Lean Rich Heat Exchangers)

The **Equipment ID** block should show the equipment ID or mark number.

The **Location block** shall indicate the location of the equipment inspected, including building and elevation as applicable.

The **Drawing No. block** shall include any drawing number that was used for inspection.

The **Conclusion block** shall be completed to identify the conclusion of the inspection. If modification is suggested or required, it shall be detailed in the **Comments block**. Additional pages may be used to describe any modification.

The Inspection Attributes blocks shall be completed for each attribute. If an attribute is not applicable, **"NA"** shall be so indicated. Completed may be made in the attribute box or the Comments block (e.g., weld is damaged on the backside of panel).

Bolts, Nuts, Washers

All bolts, nuts, and washers used to support equipment shall be inspected. If any of these items are missing, a check in the **"YES" column** shall be made, together with an indication of the condition.

A tightness check of the bolting hardware shall be performed by hand. If the hardware is loose when turned by hand, a check in the **"YES" column** shall be made, together with an indication of the condition.

If there is any significant corrosion present, a check in the **"YES" column** shall be made, together with an indication of the condition. The walkdown engineer shall use judgment in evaluating the level of significant corrosion.

Welds

All welds used to support equipment shall be visually inspected for cracks/damage. A check in the **"YES" column** shall be made if the same is present and an indication of the condition.

Supports

All supports shall be visually inspected for damaged or missing components (i.e., cotter pins, stiffeners, etc.). If any components are missing, a check in the **"YES" column** shall be made, along with an identification of the missing component.

An inspection for corrosion shall be made similar to that of the bolting hardware.

Seismic Clearance/Flexibility

All seismic sensitive equipment shall be inspected to check that adequate clearance exists to prevent any adverse interaction with adjacent systems, structures, or components.

Commodities in close proximity shall be evaluated for potential interaction. Suspended systems that are supported with rod hangers or other flexible dead load supports with little or no lateral restraint will result in large displacements due to a seismic event. The walkdown engineer shall use judgment in estimating displacements of commodities in close proximity based on the flexibility of the commodity. If commodities are in close proximity, a check in the **"YES" column** shall be made, along with the identification and location of the commodity.

An evaluation of the flexibility of the system shall be made.

For commodities in close proximity, an inspection of the support system is required to check for structural integrity. (A commodity may not have an adverse interaction due to "swing," but the anchorage may not be sufficient to prevent the commodity from falling and impacting the sensitive seismic commodity.) Documentation of this inspection shall be performed on a separate **Seismic Walkdown Work Sheet.**

The **Comments block** shall include a description of any modification. It also should include any comments on the seismic adequacy, general condition of the equipment, or any unacceptable condition that is not specifically identified as an inspection attribute.

SEISMIC EQUIPMENT WALKDOWN WORK SHEET	Page __of__

System Description:	LINE NUMBER	LOCATION	DRAWING NO.

CONCLUSION	ENGINEER: _____
__ACCEPTABLE __ACCEPTABLE (Modification required) __UNACCEPTABLE See comments __INACCEPTABLE Acceptability not determined	DATE: _____

INSPECTION ATTRIBUTES

	YES	NO	N/A	COMMENTS
A. BOLTS, NUTS, WASHERS				
MISSING				
LOOSE				
CORROSION				
B. WELDS				
CRACKED/DAMAGED				
C. SUPPORTS				
MISSING PARTS				
CORROSION				
D. SEISMIC CLEARANCE				
PROXIMITY				
FLEXIBILITY				
ADJACENT EQUIPMENT				
COMMENTS:				

SEISMIC PIPING WALKDOWN CHECKLISTS

INSTRUCTIONS FOR COMPLETION OF SEISMIC WALKDOWN WORK SHEET FOR PIPING

The walkdown team shall complete each work sheet as follows:

The **System Description block** shall include the system description inspected (i.e., 10" Rich DEA)

The **Line Number block** should show the line number.

The **Location block** shall indicate the location of the line inspected, including building and elevation as applicable.

The **Drawing No. block** shall include any drawing number that was used for inspection.

The **Conclusion block** shall be completed to identify the conclusion of the inspection. If modification is suggested or required, it shall be detailed in the Comments block. Additional pages may be used to describe any modification.

The **Inspection Attributes** blocks shall be completed for each attribute. If an attribute is not applicable, "NA" shall be so indicated. Comments may be made in the **attribute box** or the Comments block (e.g., strap is missing on third pipe support from Lean-Rich Heat Exchanger)

Piping

Piping shall be inspected for cracks or damaged components. If cracking or damaged components exist, a check in the **"YES" column** shall be made, along with an indication of the piping condition.

If there is any significant corrosion present, a check in the **"YES" column** shall be made, along with an indication of the condition. The walkdown engineer shall use judgment in evaluating the level of significant corrosion.

Supports

All supports shall be visually inspected for damaged or missing components (i.e., cotter pins, stiffeners, etc.). if any components are missing, a check in the **"YES" column** shall be made along with an identification of the missing components.

An inspection for corrosion shall be made similar to that of the piping.

Supports hardware (i.e., straps, rods, steel, etc.) shall be inspected for damaged and/or loose components. If an adverse condition exists, a check in the **"YES" column** shall be made, along with an indication of the adverse condition.

Seismic Clearance/Flexibility

All piping shall be inspected to check that adequate clearance exists to prevent any adverse interaction with adjacent systems, structures, or components.

Commodities in close proximity shall be evaluated for potential interaction. Suspended systems that are supported with rod hangers or other flexible dead load supports with little or no lateral restraint will result in large displacement due to a seismic event. The walkdown engineer shall use judgment in estimating displacement of commodities in close proximity, a check in the **"YES" column** shall be made, along with the identification and location of the commodity.

For commodities in close proximity, an inspection of each commodity's support arrangement is required to check for structural integrity. (A commodity may not have an adverse interaction due to "swing," but the anchorage may not be sufficient to prevent the commodity from falling and impacting the sensitive seismic commodity.) Documentation of this inspection shall be performed on a separate **Seismic Walkdown Work Sheet**.

The **Comments block** shall include a description of any modification. It also should include any comments on the seismic adequacy, general condition of the equipment, or any unacceptable condition that is not specifically identified as an inspection attribute.

SEISMIC PIPING WALKDOWN WORK SHEET Page __of__

System Description:	LINE NUMBER	LOCATION	DRAWING NO.

CONCLUSION	ENGINEER: _____
__ACCEPTABLE __ACCEPTABLE (Modification required) __UNACCEPTABLE See comments __INACCEPTABLE Acceptability not determined	DATE: _____

INSPECTION ATTRIBUTES

	YES	NO	N/A	COMMENTS
A. PIPING				
DAMAGED				
CORROSION				
FLG/THRD/JTS				
BURIED RUN				
ADEQUATE BRANCH FLEXIBILITY				
RIGIDLY SPANS COMPONENTS				
B. SUPPORTS				
PIPE SPANS OK				
MISSING HARDWARE				
CORROSION				
HARDWARE DAMAGED/ LOOSE				
C. SESMIC INTERACTION				
ADEQUATE CLEARANCE				
ADJ COMPONENTS SECURE				
CLEARANCE AT AOV'S/ MOV'S				

SEISMIC WALKDOWN WORK SHEET

System Description	LINE NUMBER	LOCATION	DRAWING NO.

COMMENTS - SKETCHES

A-10

WHAT-IF/CHECKLIST FORM

Analysis Team:

Date of Analysis:

Area of Investigation:

Page:

Scenario No.	Checklist No. Or Drawing No.	What-if?	Consequences	Likelihood	Existing Controls	Recommendation

A-11

Trade Secrets/Confidential Information

Trade Secret
If a business believes that information required or requested involves the release of a trade secret, the business shall provide the Hazardous Materials Division (HMD) with a notification in writing that the information is considered a trade secret. Upon receipt of a claim of a trade secret related to the Risk Management Plan (RMP), the HMD will review the claim and will segregate properly substantiated trade secret information from other information that is otherwise disclosable to the public upon request in accordance with the California Public Records Act (Chapter 3.5 commencing with Section 6250, Division 7, Title 1 of the Government Code).

Trade secret is defined in subdivision (d) of Section 6254.7 of the Government Code and Section 1060 of the Evidence Code.

The HMD may disclose trade secrets to authorized officers or employees of other governmental agencies only in connection with the official duties of those officers or employees pursuant to any law for the protection of health and safety.

Confidential Information
Information that identifies where hazardous materials are used, handled, or stored at a facility, such as site maps, is considered confidential. It is the business's responsibility to ensure that such information is identified within the RMP document and is marked confidential.

A-12

Quick Reference Worst Case Release Scenario Requirements

Type of Chemical	Assume Time for Total Release	Release Rate (Pounds/minute)
Toxic gases at ambient temperature (handled as a gas or as a liquid under pressure)	Quantity in the vessel or pipe is released as a gas over 10 minutes.	If no passive mitigation systems are in place, total quantity released divided by 10.
		If passive mitigation systems are in place, total quantity released divided by 10, then multiplied by 0.55 (mitigation factor).[1]
Toxic gases at ambient pressure (handled as refrigerated liquids)	If no passive mitigation or if the contained pool would have a depth of 1 cm or less: released as a gas in 10 minutes.	Total quantity released divided by 10.
	If contained by passive mitigation in a pool with a depth greater than 1 cm: assume the quantity in the vessel or pipe is spilled instantaneously to form a liquid pool.	The volatilization rate (release rate) shall be calculated at the boiling point of the substance and at the conditions specified in "Toxic liquids" below.
Toxic liquids at ambient temperature	Assume that the quantity is spilled instantaneously to form a liquid pool. • Undiked: Pool will spread until it is 1 cm deep. • Diked (passive mitigation): Pool will have surface area defined by the area within the dike.	Calculated by a model that includes volatilization rate, surface area, maximum temperature and concentration of the chemical in the pool, and the surface characteristics of the substrate underneath the spill.
Flammables (liquids or gases)	Make appropriate assumptions based on facility conditions. Consider both active and passive mitigation systems.[2,3]	
Solids	Assume one-hour release.	Use USEPA, OES or California Air Resources Board approved model. (Currently OES has not identified an air dispersion model for solids. The AA may want to confer with the local air quality management district or air pollution control district on appropriate air dispersion modeling.)

From the California Office of Emergency Services CalARP Program AA Guidance, August 28, 2003

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1 USEPA's Off-site Consequence Analysis Guidance Document, April 1999, Section 3.1.2
2 Ibid, Section 1.5.3
3 USEPA's General Guidance for Risk Management Programs, Chapter 4, Section 4-9

A-13

Alternative Release Scenario Analysis (Section 2750.4)

The facility must identify at least one alternative release scenario for each toxic chemical and one alternative release scenario for all flammable chemicals.

Each selected alternative release scenario must:

- Be more likely to occur than the worst-case release scenario above, and
- Potentially reach an endpoint offsite, unless no such scenario exists.

Potential alternative release scenarios might include:

- Transfer hose releases;
- Process piping releases;
- Process vessel or pump releases;
- Vessel overfilling and spill, or vessel over-pressurization and venting through relief valves or rupture disks; or,
- Shipping container mishandling; breakage or puncture leading to a spill.

Active and passive mitigation systems may be considered if they can withstand the event that triggered the release and remain functional. The facility must consider the following in selecting alternative release scenarios:

- The five-year accident history required by Section 2750.9; and
- Failure scenarios identified under Section 2755.2 or 2760.2.

From the California State Office of Emergency Services CalARP Program AA Guidance, August 28, 2003.

Appendix F

PROCEDURES FOR USE OF THE CALIFORNIA EMERGENCY RESERVE ACCOUNTS

Vent

Department of Toxic Substances Control

Terry Tamminen
Agency Secretary
Cal/EPA

1001 "I" Street, 25th Floor
P.O. Box 806
Sacramento, California 95812-0806

Arnold Schwarzenegger
Governor

RECEIVED
AUG 16 2004
DEH
DIRECTOR'S OFFICE

July 23, 2004

To: All Law Enforcement Agencies and Hazardous Materials Incident Responders

Subject: FUNDING FOR REMOVAL OF HAZARDOUS MATERIALS FROM SPILLS OR CLANDESTINE DRUG LABORATORIES

Attached are the Department of Toxic Substances Control's (DTSC) guidance documents for requesting assistance for removal of hazardous materials from abandonments, spills, or illegal drug labs. The Emergency Response Program of DTSC is providing you with this information to ensure that law enforcement and emergency personnel are aware of the services available and the procedures to obtain DTSC assistance for emergency removal actions. This information supersedes all previous letters circulated regarding these funds.

Incidents involving improper disposal of hazardous materials occur daily in California. Each year DTSC, in cooperation with local hazardous materials responders, has successfully mitigated thousands of emergency response incidents statewide. DTSC provides technical and financial assistance to local agencies. When hazardous materials pose an imminent threat to public health and the environment and local agency or responsible party resources are insufficient to handle these problems, DTSC may be able to assist in the response to the emergency. DTSC can supplement your response capabilities with technical or contractor assistance to conduct an emergency removal action. In addition, when an illegal drug manufacturing operation or illegal disposal of drug lab waste is encountered, DTSC will conduct a removal action to eliminate the acute threats posed by chemicals associated with these labs.

To the extent we can assist local government in the mitigation of clandestine drug laboratories and hazardous materials emergencies by providing contractors, equipment, or expertise, we are willing to do so and encourage your use of our service. DTSC Emergency Response staff are available to make presentations on our program to local agencies.

Please distribute a copy of the attached information packets on DTSC's Emergency Response Program to any personnel who might require emergency removal support. Should you have any questions regarding our program or desire a presentation at one of your staff meetings, please contact me at (916) 255-6572. Thank you for your continued support and cooperation.

Sincerely,

Adam W. Palmer, Chief
Emergency Response Unit

Attachments

F. POLICIES

1. DTSC Policy for Removal of Hazardous Materials from Clandestine Drug Labs

ILLEGAL DRUG LABORATORY REMOVAL PROGRAM

In 1995 Senate Bill 47x added California Health & Safety Code Section 25354.5 to require the California Department of Toxic Substances Control (DTSC) to remove and dispose of hazardous materials from clandestine drug manufacturing sites. DTSC provides State or local law enforcement agencies with assistance in removal actions at sites where these operations occur. **This is accomplished by contacting the DTSC Emergency Response Duty Officer.**

TO REQUEST DTSC ASSISTANCE

DTSC assistance for removal of suspected hazardous substances from clandestine drug labs may be requested by State or local law enforcement agencies, or by other local government agencies working with law enforcement agencies on a drug lab. DTSC assistance for removal of abandoned drug lab wastes may be requested by local agencies not affiliated with law enforcement.

Such an agency wanting to request State assistance during normal work hours (Monday-Friday, 8:00 AM – 5:00 PM), should call the State Department of Toxic Substances Control (DTSC) at (800) 260-3972 or (916) 255-6504, and request to speak to the **DTSC Emergency Response Duty Officer.** Between 5:00 PM and 8:00 AM, weekends, or on holidays, call the Governor's Office of Emergency Services' (OES) Warning Control Center at (800) 852-7550. Notify OES of the incident and of the fact that you are requesting state assistance for the removal. OES will contact the DTSC Emergency Response Duty Officer who will then contact you.

INFORMATION REQUIRED

Before requesting assistance, you should:

1) Identify the materials to be removed, and separate them from materials to be left behind. Materials eligible for removal include:
   - Precursors and chemicals used in the manufacture of illegal drugs.
   - Hazardous materials and hazardous wastes that pose a threat to human health or the environment.

Note: The hazardous waste contractor sent by the DTSC Duty Officer will only perform those actions and remove those materials authorized by the DTSC Duty Officer. **Do not expect them to take any other actions or to remove anything else unless you are willing to pay for it. Do not ask or expect the Duty Officer or the contractor to remove solid waste (trash, garbage, etc).**

2) Determine the quantity released, if any.

3) If you have the necessary training and equipment, HAZCAT (perform hazard categorization tests) to identify or categorize the hazards presented by the substances, such as pH and flammability.

4) Prepare an inventory, which includes the quantity of each type of material requiring removal, and the approximate quantity of contaminated soil, if any.

5) Gather all available information regarding the responsible party (RP), i.e., the drug lab operator.

THE EMERGENCY RESPONSE DUTY OFFICER

The Emergency Response Duty Officer will evaluate the above information to determine if the incident is eligible for a removal action.

1) The Emergency Response Duty Officer will contact and dispatch a contractor to perform the removal and disposal. **This is not a reimbursement program.** Do not contact a local contractor and dispatch them on your own. **If you do contact a contractor and request their services, your agency will be responsible for any costs incurred.**

2) The Emergency Response Duty Officer will establish the scope of work for the contractor. Any changes to the scope of work must be approved by the Emergency Response Duty Officer. **DTSC will not pay for work that was not authorized by the Emergency Response Duty Officer.**

3) The Emergency Response Duty Officer will provide you with a Clandestine Laboratory Unit Expenditure (CLUE) number, which must appear on all documentation submitted to DTSC.

INDIAN LAND

Incidents involving drug labs or abandoned drug lab wastes located on Indian reservation land may not be eligible for funding and will be handled on a case by case basis.

Revised: 6-29-2004

DOCUMENTATION

As a condition of receiving DTSC assistance, the requesting agency is required to provide on-scene oversight, site security by law enforcement personnel, and written documentation of removal actions. This includes filling out and signing the Clan Lab Removal Incident Report, and the Clan Lab Removal Work Log. The requesting agency must also sign the Hazardous Waste Manifest on the "Generator" line (line 16).

The Clan Lab Removal Incident Report, Clan Lab Removal Work Log, and any other documentation should be mailed to DTSC within 10 working days of the initial funding request. **All such information should be mailed to:**

DTSC, Emergency Response Unit
8800 Cal Center Drive
Sacramento, CA 95812

For drug labs where the name of the drug lab operator is known, the primary suspect or drug lab operator (who has usually been arrested) will be designated as the generator, and that person's name should be written or typed on line 3 or the Manifest. The mailing address for that person should be entered on line 3 as: c/o DTSC Emergency Response Unit, 8800 Cal Center Drive, Sacramento, CA 95826. For abandoned drug lab wastes or when the operator is not known, the generator's name will be "unknown drug lab operator", and the mailing address will also be: c/o DTSC Emergency Response Unit, 8800 Cal Center Drive, Sacramento, CA 95826. The phone number for line 4 of the Manifest should be: (800) 260-3972.

SPECIAL POLICIES

EPA IDENTIFICATION NUMBERS

The agency requesting assistance for removal of drug lab wastes must include an EPA Identification (EPA ID) number on the manifest. Normally, the requesting agency will use the county Clandestine Drug Lab EPA ID number, which has the format: CLU 111 111 0XX, where XX is the County Number, between 1 and 58. The Emergency Response Duty Officer can provide this number to on-scene personnel.

If the responsible party is conducting a removal and needs an EPA ID number to manifest Non-RCRA waste, they may obtain a California EPA ID number by calling DTSC at (800) 618-6942 or (916) 255-1136, Monday – Friday, 8:00 AM to 5:00 PM. From 5:00 PM to 8:00 AM or on weekends or holidays etc, they can obtain a Temporary California EPA ID Number from the ERDO.

If a responsible party needs an EPA ID Number for RCRA waste, or for a combination of RCRA waste and Non-RCRA waste, they should call (800) 300-2193. Upon calling that number, the caller will hear a message which will direct them to press #1 to contact the National Response Center (NRC) if they have not yet reported the spill. If they have already made the spill notification, they should press #3 to contact the USEPA Region 9 Duty Officer who will provide the caller with an EPA ID Number for the RCRA waste.

EXCLUDED MATERIALS

The following materials at, or associated with a drug lab will not be removed unless special circumstances exist which are determined by DTSC to represent a significant threat to human health or the environment:

- Used motor oil (waste oil).
- Gasoline in a regular gasoline container.
- Diesel fuel.
- Radioactive waste.
- Infectious waste, except that needles and syringes found at drug labs will be removed.
- Household hazardous materials.
- Freon containers or flammable liquid containers which are empty and dry, unless there is some residue/contamination on them which constitutes a direct contact hazard.
- Propane cylinders that are empty or contain propane.
- Oxygen cylinders that are empty or contain oxygen.
- DOT specification Cylinders containing other non-drug lab related gases
- Solid waste/garbage or other non-hazardous items.

RADIOACTIVE WASTE

DTSC does not handle radioactive materials. Radioactive wastes are handled by the State Department of Health Services Radiologic Health Branch. They should be contacted for assistance on an incident involving radioactive materials. They can be contacted Monday - Friday from 8:00 AM – 5:00 PM at (916) 445-0931 and after hours through OES.

INFECTIOUS WASTE

DTSC will not provide removal of infectious wastes, except that, at drug labs, and at abandoned drug lab waste sites, removal and disposal of needles and syringes will be provided.

CLAN LAB REMOVAL INCIDENT REPORT

D[illegible]C Duty Officer: _____ CLUE# _____

Date of Incident: _____ Time: _____

Address: _____ Zip: _____

Descriptive Location: _____

_____

HAZARDOUS MATERIALS (ATTACH ADDITIONAL SHEETS, IF NECESSARY)

SUBSTANCE	QUANTITY	HAZCAT RESULTS

CLAN LAB OPERATOR (NAME, DRIVER'S LICENSE NUMBER, DATE OF BIRTH, VEHICLE REGISTRATION NUMBER, ADDRESS, PHONE):

_____

_____

_____

PROPERTY OWNER (NAME, DRIVER'S LICENSE #, DATE OF BIRTH, CAR REGISTRATION NUMBER, ADDRESS, APN, PHONE, ETC.):

_____

_____

_____

US-EPA ID NUMBER (ISSUED FOR CLAN LAB): _____

Warrant Issued: YES _____ or NO _____

Law Enforcement Agency Case Number: _____

Warrant Number (if available): _____

REPORT BY (PRINT): _____ TITLE: _____

OFFICE PHONE: _____ SIGNATURE: _____

A[illegible]CY: _____ TASK FORCE: _____

CLAN LAB REMOVAL WORK LOG

Date(s) of Removal: _____ CLUE # _____

Location of Removal: _____

Contractor: _____ Phone: _____

Contractor's Representative: _____

Description of Clandestine Laboratory (Type of Process): _____

Description of Removal Activities: _____

_____

_____

_____

EQUIPMENT USED	TIME	
DESCRIPTION	ARRIVE	DEPART

LABOR USED	TIME	
JOB CLASSIFICATION	ARRIVE	DEPART

MATERIALS USED	
DESCRIPTION	NUMBER OF UNITS

MATERIALS USED	
DESCRIPTION	NUMBER OF UNITS

(USE ADDITIONAL SHEETS FOR THE ABOVE INFORMATION IF NEEDED)

COMMENTS ON CONTRACTOR'S PERFORMANCE: _____

_____

_____

REGISTERED HAULER USED: _____ HAULER NUMBER: _____

MATERIAL TRANSPORTED TO: _____ MANIFEST NUMBER: _____

TIME AND DATE JOB WAS COMPLETED: _____

REPORT BY: _____ AGENCY: _____

2. DTSC Policy for Removal of Hazardous Materials from Emergency Response Incidents

EMERGENCY REMOVAL ACTIONS:

Health and Safety Code, Section 25354 provides funding for the purpose of taking immediate corrective action necessary to remedy or prevent an emergency resulting from a fire, explosion, or human exposure to a release or threatened release of hazardous substances. This includes responding to "midnight dumping," uncontrolled or threatened releases of hazardous substances, spill situations involving an unknown responsible party, or an incident requiring stabilization or mitigation to prevent potential emergencies. **Requests for removal actions or other assistance can be made by contacting the DTSC Emergency Response Duty Officer.**

Note: Pursuant to H&S Code Section 25353, DTSC will not perform emergency removal actions for incidents where a State or Federal governmental agency is the responsible party or otherwise has jurisdictional responsibility, unless special circumstances exist, such as an immediate danger of fire or explosion or large scale threat to the environment.

TO REQUEST DTSC EMERGENCY REMOVAL ASSISTANCE:

DTSC assistance for off-highway removal and disposal of hazardous materials may be requested by local agencies such as local health, environmental health, fire, or law enforcement agencies. A business or a private citizen concerned about hazardous materials, an emergency hazardous materials incident, or some abandoned hazardous materials, should contact one of the above-mentioned local government agencies.

A local government agency wanting to request DTSC assistance during normal work hours (Monday-Friday, 8:00 AM – 5:00 PM), should call the State Department of Toxic Substances Control (DTSC) at (800) 260-3972 or (916) 255-6504, and request to speak to the **DTSC Emergency Response Duty Officer**. Between 5:00 PM and 8:00 AM, weekends, or on holidays, call the Governor's Office of Emergency Services' (OES) Warning Control Center at (800) 852-7550. Notify OES of the incident and of the fact that you are requesting DTSC assistance for the emergency removal. They will contact the DTSC Emergency Response Duty Officer who will then contact you.

INFORMATION REQUIRED

Before requesting assistance, you should:

1) Determine if the material is a hazardous waste or hazardous substance.
2) Determine the quantity released, if any.

3) HAZCAT (perform hazard categorization tests) to identify or categorize the hazards presented by the substances. **To qualify for State funding of a removal action, the substances must exhibit at least one of the following characteristics or criteria:**

- **Toxicity**
- **Corrosivity (A pH of 12.5 or higher, or a pH of 2.0 or less)**
- **Reactivity to air or water**
- **Flammability**
- **Explosivity**
- **Have some other characteristic that makes it a serious hazard to human health or the environment.**

4) Prepare an inventory, which includes the number of containers requiring removal, including how full the containers are, and the approximate quantity or surface area of contaminated soil, if any.

5) Determine the location of the incident relative to waterways, public access, and nearest population.

6) Determine whether the property is publicly or privately owned (areas under the control of Indian reservations or federal or state agencies may not be eligible for funding).

7) Gather all available information regarding the **responsible party (RP).**

8) Determine whether the RP (if known) is able or willing to pay.
Note: An attempt must be made to contact the RP (if known) and inform them of their responsibility to pay.

9) Determine that the incident would not be more appropriately handled and/or funded by another agency (See the Section entitled "Alternative Funding" below). If you are unsure or have questions about alternative funding sources contact the Emergency Response Duty Officer.

THE EMERGENCY RESPONSE DUTY OFFICER

The Emergency Response Duty Officer will evaluate the above information to determine if the incident is eligible for an emergency removal action. If the incident qualifies for DTSC assistance:

1) The Emergency Response Duty Officer will contact and dispatch a contractor to perform the removal and disposal. **This is not a reimbursement program.** Do <u>not</u> contact a local contractor and dispatch them on your own. **If you do contact a contractor and request their services, your agency will be responsible for any costs incurred.**

2) The Emergency Response Duty Officer will establish the scope of work for the contractor. Any changes to the scope of work must be approved by the Emergency Response Duty Officer. DTSC will not pay for work that was not authorized by the Emergency Response Duty Officer.

INFECTIOUS WASTE

DTSC will not provide removal of infectious waste.

GOVERNMENT LAND

Indian reservations and properties owned by the Federal Government or by the State of California may not be eligible for emergency removal actions (H&S Code Section 25353). The specific agency in control of the property will bear responsibility for the removal unless a clear emergency exists which the responsible agency is unable to address in a proper and timely manner. In remote areas or other instances where ownership is uncertain, the Emergency Response Duty Officer may authorize a removal if a delay to verify ownership would create an endangerment.

ON-HIGHWAY SPILLS

Releases on State highways, or within State highway right-of-ways, will be handled by CALTRANS. Reports of such releases should be addressed to OES, who will in turn notify CALTRANS.

Revised: 8-11-2004

If a responsible party needs an EPA ID Number for RCRA waste, or for a combination of RCRA waste and Non-RCRA waste, they should call (800) 300-2193. Upon calling that number, the caller will hear a message which will direct them to press #1 to contact the National Response Center (NRC) if they have not yet reported the spill. If they have already made the spill notification, they should press #3 to contact the USEPA Region 9 Duty Officer who will provide the caller with an EPA ID Number for the RCRA waste.

INNOCENT LANDOWNERS

In instances where hazardous materials have been abandoned on property where the owner is clearly not the perpetrator and the materials do not have an identifiable owner, DTSC assistance may be requested from the Emergency Response Duty Officer.

GUARANTEE OF PAYMENT

If the responsible party (RP) wants to or is willing to pay for the emergency removal, the RP may contact the HazMat contractor of their choice to make arrangements. However, many contractors are unwilling to perform cleanup/removal actions for private RPs without some proof of their ability to pay. In the middle of the night or on weekends, it is often not possible for RPs to provide that sort of proof. In such situations involving RPs that **are** willing to pay, the Duty Officer may guarantee payment so that the contractor will be paid if the RP fails to pay the invoice. **The Duty Officer will only do this if the RP agrees to use one of the DTSC contractors.**

EXCLUDED MATERIALS

The emergency removal of the following materials involved in incidents will not be funded unless special circumstances exist which are determined by DTSC to represent a significant threat to human health or the environment (e.g., the presence of PCB's must be confirmed by laboratory analysis):

- Waste oil (the mere presence of chlorine is not enough to demonstrate the presence of PCBs)
- Petroleum fuels (diesel, gasoline, crude oil, or any fraction thereof)
- Fuel tank spills from vehicular accidents
- Radioactive waste
- Infectious waste
- Latex paint
- Household hazardous waste/materials

RADIOACTIVE WASTE

DTSC does not handle radioactive materials. Radioactive wastes are handled by the State Department of Health Services Radiologic Health Branch. They should be contacted for assistance regarding an incident involving radioactive materials. They can be contacted Monday - Friday from 8:00AM – 5:00PM at (916) 445-0931 and after hours through OES.

For incidents not involving drug lab waste, the requesting agency is the Generator. In addition to signing on line 16 of the Manifest, the requesting agency's name and mailing address should be written or typed on line 3 of the Manifest. DTSC is not the Generator for these incidents, and so DTSC should not appear there. The requesting agency's main office phone number should go on line 4 of the Manifest.

SPECIAL POLICIES

ALTERNATIVE ASSISTANCE

- If there has been a release to fish or wildlife habitat, call State OES at (800) 852-7550 and request assistance from the Department of Fish and Game, Fish and Wildlife Pollution Account.
- If the incident is an oil spill, request assistance from the Department of Fish and Game Office of Oil Spill Prevention and Response, Oil Spill Response Trust Fund by calling (916) 445-0045.
- If there has been a release to surface or ground water, request assistance from the State Water Resources Control Board (SWRCB), Water Pollution Cleanup and Abatement Account by calling (916) 327-4428 during normal work hours. After hours, call OES at (800) 852-7550 and request that they contact someone at the SWRCB.
- If the incident is on a State highway or within a State highway right-of-way, call OES at (800) 852-7550 and request assistance from the California Department of Transportation (CALTRANS).
- If the incident involves radioactive materials, call OES at (800) 852-7550 and request that OES call the State Department of Health Services (DHS) Duty Officer who will then contact the DHS Radiologic Health Branch.

EPA IDENTIFICATION NUMBERS

The agency requesting assistance for removal of hazardous wastes must include an EPA Identification (EPA ID) number on the manifest. Normally, the requesting agency will use the County's EPA ID number, which has the format: CAS 111 111 0XX, where XX is the County Number, between 1 and 58. The Emergency Response Duty Officer can provide this number to on-scene personnel.

If the responsible party is conducting a removal and needs an EPA ID number to manifest Non-RCRA waste, they may obtain a California EPA ID number by calling DTSC at (800) 618-6942 or (916) 255-1136, Monday – Friday, 8:00 AM to 5:00 PM. From 5:00 PM to 8:00 AM or on weekends or holidays etc, they can obtain a Temporary California EPA ID Number from the ERDO.

3) The Emergency Response Duty Officer will provide you with an Emergency Response Expenditure Report (ERER) number, which must appear on all documentation submitted to DTSC.

4) DTSC's Emergency Response Unit will not conduct removals in situations that are not emergencies. The Emergency Response Duty Officer will only provide removal and disposal of those hazardous materials which meet one or more of the criteria specified in this policy document, and pose a threat to human health or the environment. If it is not an emergency, or does not pose a serious threat to human health or the environment, the incident will not qualify for DTSC assistance. If you are unsure whether a situation warrants a removal action, contact the Emergency Response Duty Officer and provide the required information. The Emergency Response Duty Officer will determine whether an emergency removal action is warranted.

5) If the incident exceeds the resources available from DTSC, the Emergency Response Duty Officer will contact the U.S. Environmental Protection Agency (USEPA) and request assistance.

6) If technical assistance is needed from DTSC, the Emergency Response Duty Officer will contact the appropriate staff and coordinate their involvement in the response. The DTSC Emergency Response Program will not perform site mitigation or remediation activities. If your agency requires assistance in performing a remedial action at a hazardous waste site, the Emergency Response Duty Officer will assist in referring the request to the appropriate DTSC office.

The on-scene response personnel must attempt to identify the wastes involved by field testing (HAZCAT) or observation. If your agency cannot accomplish this task, the Emergency Response Duty Officer may send a contractor to perform that task, but will not be able to provide removal if the materials do not exhibit one or more of the HAZCAT characteristics specified in number 3 under "Information Required" above.

DOCUMENTATION

As a condition of receiving assistance from DTSC, the requesting agency is required to provide on-scene oversight, including documentation of removal actions. This includes filling out and signing the Off-Highway Emergency Removal Incident Report, and the Off-Highway Emergency Removal Work Log. The requesting agency must also sign the Hazardous Waste Manifest on the "Generator" line (Line 16).

The Off-Highway Emergency Removal Incident Report, Emergency Removal Work Log, and any other documentation should be mailed to DTSC within 10 working days of the initial request for DTSC assistance. All such information should be mailed to:

DTSC, Emergency Response Unit
8800 Cal Center Drive
Sacramento, CA 95826

OFF-HIGHWAY EMERGENCY REMOVAL WORK LOG

Date(s) of Removal: _____ ERER # _____

Location of Removal: _____

Contractor: _____ Phone: _____

Contractor's Representative: _____

Time of Contractor Arrival: _____ Time of Equipment Arrival: _____

Description of Extent of Contamination: _____

Soil: _____

Water: _____

Structure: _____

Description of Removal Activities: _____

_____

EQUIPMENT USED	TIME	
DECRIPTION	ARRIVE	DEPART

LABOR USED	TIME	
JOB CLASSIFICATION	ARRIVE	DEPART

MATERIALS USED	
DESCRIPTION	NUMBER OF UNITS

MATERIALS USED	
DESCRIPTION	NUMBER OF UNITS

(USE ADDITIONAL SHEETS FOR THE ABOVE INFORMATION IF NEEDED)

QUANTITY OF HAZARDOUS MATERIALS REMOVED (IDENTIFICATION PROCEDURES, LAB RESULTS IF AVAILABLE): _____

_____

_____

GISTERED HAULER USED: _____ HAULER NUMBER: _____

MATERIAL TRANSPORTED TO: _____ MANIFEST NUMBER: _____

TIME AND DATE JOB WAS COMPLETED: _____

REPORT BY: _____ AGENCY: _____

OFF–HIGHWAY EMERGENCY REMOVAL INCIDENT REPORT

DTSC Duty Officer: _____ ERER # _____

Date of Incident: _____ Time: _____

Address: _____ Zip: _____

Descriptive Location: _____

_____

HAZARDOUS MATERIALS (ATTACH ADDITIONAL SHEETS, IF NECESSARY)

SUBSTANCE	QUANTITY	HAZCAT RESULTS

RESPONSIBLE PARTY (NAME, DRIVER'S LICENSE NUMBER, DATE OF BIRTH, VEHICLE REGISTRATION NUMBER , ADDRESS, PHONE) :

_____

_____

_____

DESCRIPTION OF MITIGATION MEASURES (ISOLATION, EVACUATION, CROWD CONTROL): _____

_____

_____

_____

_____

_____

_____

REPORT BY : _____ TITLE: _____

OFFICE PHONE: _____ AGENCY: _____

I CERTIFY THAT THIS INCIDENT REQUIRED IMMEDIATE CORRECTIVE ACTION NECESSARY TO REMEDY OR PREVENT AN EMERGENCY RESULTING FROM EITHER A FIRE, AN EXPLOSION, OR HUMAN EXPOSURE TO HAZARDOUS SUBSTANCES:

SIGNATURE: _____

Appendix G

THE COUNTY OF SAN DIEGO NO LONGER MAINTAINS OR UPDATES A LIST OF REGISTERED HAULERS OPERATING WITHIN THE OPERATIONAL AREA OF SAN DIEGO COUNTY

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
1001 “I” Street
P.O. Box 806
Sacramento, California 95812-0806

Arnold Schwarzenegger
Governor

CONSOLIDATED TRANSPORTERS

List of registered hazardous waste transporters that have notified the Department of Toxic Substances Control of their intent to operate under the consolidated manifesting procedures per Health and Safety Code section 25160.2. **This list was last updated on August 7, 2006**. To check the current registration status of a hazardous waste transporter, you can log on to www.dtsc.ca.gov/database/Transporters/Trans000.cfm or call (916) 255-4368.

Disclaimer: Information provided is for guidance purposes only. The accuracy of the data is not warranted or guaranteed. The listed county indicates the primary transporter address. Transporters may operate in other counties.

Reg. Number	Transporter Name	County Name
5362	A & R TRANSPORT	SAN BERNARDINO
1386	A & S METAL RECYCLING, INC.	LOS ANGELES
4033	ABE ARENS BROTHERS ENVIRONMENTAL INC.	EL DORADO
5116	ACTION WASTE OIL SERVICE, LLC	LOS ANGELES
4285	ADVANCED CHEMICAL RECYCLING ENT. INC	LOS ANGELES
3314	ALL PHASE ENVIRONMENTAL SERVICES	ORANGE
3929	ALL VALLEY DISPOSAL, INC.	FRESNO
4439	ALPHA OIL CO.	LOS ANGELES
2018	AMBERWICK CORPORATION	LOS ANGELES
1601	AMERICAN OIL COMPANY	LOS ANGELES
5076	AMERICAN PARTS CLEANER SERVICE	LOS ANGELES
3744	AMERICAN VALLEY WASTE OIL INC.	MERCED
4148	ANTIFREEZE DELIVERY SYSTEMS	SAN DIEGO
4006	ARENS ENVIRONMENTAL SERVICES, INC.	SOLANO
15	ASBURY ENVIRONMENTAL SERVICES	LOS ANGELES
4663	AVALON ENVIRONMENTAL SERVICES	ORANGE
3655	BAY VALLEY ENVIRONMENTAL, INC	SANTA CLARA
3488	BAYSIDE OIL II, INC.	SANTA CRUZ
4391	BENNY'S MAINTENANCE & OIL FILTER RECYCLING	LOS ANGELES
570	BLACK GOLD INDUSTRIES	VENTURA
3697	BLACK STAR OIL CO	LOS ANGELES
4537	BMG OIL SERVICE LLC	LOS ANGELES
5166	BOBSTER, INC.	SAN JOAQUIN
1999	BUTLER OIL CO.	LOS ANGELES
5186	CA PUMPING, INC.	LOS ANGELES
5182	CALDERA'S TRUCKING	LOS ANGELES
4453	CALIFORNIA COOL	LOS ANGELES

Printed on Recycled Paper

Reg. Number	Transporter Name	County Name
3713	CALIFORNIA COOLANT SERVICE	SAN JOAQUIN
3894	CALIFORNIA OIL TRANSPORT, INC	LOS ANGELES
5394	CALIFORNIA TRANSPORT	SANTA CLARA
5342	CAMKAL INDUSTRIAL TRANSPORT, LLC	SAN FRANCISCO
5114	CARRS WASTE OIL SERVICE	LOS ANGELES
5340	CEJA TRUCKING	RIVERSIDE
5006	CHMT DBA UNITED EAGLE TRANSPORTATION, INC.	SAN FRANCISCO
4483	COLE'S SERVICES, INC.	KERN
75	CRANE'S WASTE OIL, INC.	KERN
3575	D & R OIL COMPANY	LOS ANGELES
5336	DOER ENVIRONMENTAL LLC	LOS ANGELES
3954	E.T. ABATEMENT INC.	STANISLAUS
3534	EFR ENVIRONMENTAL SERVICES INC.	SAN DIEGO
4611	ENVIRONMENTAL AUTOMOTIVE PRODUCTS	SAN DIEGO
242	EVERGREEN ENVIRONMENTAL SERVICES	ALAMEDA
1056	EXPRESS OIL COMPANY	LOS ANGELES
2950	FILTER RECYCLING SERVICES, INC.	SAN BERNARDINO
3544	FREMOUW ENVIRONMENTAL SERVICES, INC.	SOLANO
3711	FRS ENVIRONMENTAL INC.	RIVERSIDE
382	G I PUMPING CO.	LOS ANGELES
4771	GARRIS ENVIRONMENTAL CORP.	UNKNOWN
4549	GOLDEN STATE ENVIRONMENTAL	SANTA CLARA
3432	GOLDEN STATE ENVIRONMENTAL SERVICE INC.	SAN BERNARDINO
219	GOLDEN WEST OIL CO. INC.	SAN BERNARDINO
5098	HAWTHORNE MACHINERY COMPANY	SAN DIEGO
4639	HAWTHORNE POWER SYSTEMS	SAN DIEGO
3724	HAZ MAT SERVICES, INC.	ORANGE
1148	HAZARDOUS TECHNOLOGIES, INC.	LOS ANGELES
4803	HEAVY METAL ENVIRONMENTLA SERIVICES, INC.	SAN DIEGO
1849	HOT TANK SUPPLY COMPANY	FRESNO
2986	INDUSTRIAL SOLVENT & CHEMICAL CO.	SAN DIEGO
1045	ISLAND ENVIRONMENTAL SERVICES, INC.	LOS ANGELES
145	JACK STONE DRAINAGE OIL SERVICE	LOS ANGELES
5002	JENAL ENGINEERING CORPORATION	SAN DIEGO
3863	JOHNSON MACHINERY CO.	RIVERSIDE
4173	JOHNSON POWER SYSTEMS	RIVERSIDE
3420	JSE ENVIRONMENTAL SERVICES, INC.	SAN BERNARDINO
3468	KERN OIL FILTER RECYCLING	KERN
2387	KWIK-KLEEN	SAN BERNARDINO
2486	L & H CONSULTING, INC.	VENTURA
5334	LARRY WILLIAMS TRUCKING	SAN FRANCISCO
319	LEACH OIL COMPANY INC	LOS ANGELES
2369	LIGHTNING OIL CO. INC.	LOS ANGELES
5074	LOS ANGELES PUMPING	LOS ANGELES
481	MARK ALARCON'S WASTE OIL SERVICE	SAN BERNARDINO
3670	MAXIMUM OIL SERVICE	SOLANO
5332	MCD TRUCKING LLC	SAN FRANCISCO
4451	MILLAN TRUCKING	SANTA CLARA

Reg. Number	Transporter Name	County Name
4681	MILLENIUM WASTE OIL	LOS ANGELES
5380	MILLENNIUM ENVIRONMENTAL SERVICES, INC.	VENTURA
136	MORGAN ENVIRONMENTAL SERVICES INC.	ALAMEDA
539	NORTH STATE ENVIRONMENTAL	SAN MATEO
1943	OIL CONSERVATION SERVICE, INC.	FRESNO
2039	OIL RE-REFINING COMPANY INC.	UNKNOWN
3424	ONYX ENVIRONMENTAL SERVICES, LLC	UNKNOWN
3872	PACIFIC CASCADE CONSTRUCTION	SAN BERNARDINO
971	PACIFIC COAST LACQUER (PCL)	LOS ANGELES
3115	PACIFIC OIL COMPANY	LOS ANGELES
3259	PHILIP WEST INDUSTRIAL SERVICES, INC.	SOLANO
2049	PHOTO WASTE RECYCLING CO. INC.	MARIN
5346	PROLEUM	LOS ANGELES
3682	QUINN COMPANY	FRESNO
519	R C A OIL RECOVERY	ALAMEDA
4257	RAE-VAC PUMPING	LOS ANGELES
518	RAMOS ENVIRONMENTAL SERVICES, INC.	YOLO
5250	RDO EQUIPMENT COMPANY	SAN DIEGO
5086	RECYCLE IT ENVIRONMENTAL SERVICES INC	LOS ANGELES
531	RENO DRAIN OIL SERVICE	UNKNOWN
2331	RICARDO D. TADEO WASTE OIL SERVICE	LOS ANGELES
160	ROMIC ENVIRONMENTAL TECHNOLOGIES CORPORATION	SAN MATEO
3130	SACRAMENTO WASTE OIL	SACRAMENTO
4837	SAN FERNANDO OIL	LOS ANGELES
3983	SHAFFS TRANSPORTATION	KERN
3164	STARLITE RECLAMATION ENVIRONMENTAL SERVICES, INC.	SAN BERNARDINO
2102	TECHNICHEM	ALAMEDA
4807	THE REFINERY MOBILE DIVISION, INC.	UNKNOWN
3871	THERMO FLUIDS INC	UNKNOWN
4094	TOXGUARD FLUID TECHNOLOGIES INC.	ORANGE
4629	TRANSTITAN, LLC	UNKNOWN
2312	TRIAD TRANSPORT, INC.	UNKNOWN
2256	TTS ENVIRONMENTAL INC.	SOLANO
4289	TULARE COUNTY YOUTH CORPS	TULARE
4084	UNIVERSAL WASTE OIL CO	LOS ANGELES
843	WASTE OIL RECOVERY SYSTEMS, INC.	ALAMEDA
5382	WEST VALLEY ENVIRONMENTAL	LOS ANGELES
4246	WORLDWIDE RECOVERY SYSTEMS, INC.	LOS ANGELES

Appendix H

HAZARDOUS MATERIALS DIVISION
EMERGENCY RESPONSE SPECIALIST
SPECIAL ASSIGNMENT
QUALIFICATIONS AND SELECTION PROCESS

JACK MILLER
DIRECTOR

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6700 FAX (858) 505-6848
1-800-253-9933

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

June 22, 2011

HAZARDOUS MATERIALS DIVISION
EMERGENCY RESPONSE SPECIALIST
SPECIAL ASSIGNMENT

DEFINITION:

Under general direction, serves as the lead worker during an emergency response incident for all San Diego County agencies until another governmental entity or individual arrives to take control of the scene. They work under adverse and sensitive conditions, provides information, education, and consultation on hazardous materials and incidents to the public and other governmental entities, including; response activities, investigations, public risk assessments, and project management services.

DURATION:

This is a 2-year assignment that is renewable at the discretion of management.

DISTINGUISHING CHARACTERISTICS:

The Emergency Response (ER) assignment in the Department of Environmental Health (DEH) differs from other assignments in that inspections, consultations, enforcement actions, and other related duties are performed during an emergency, rather than routine situation. In this capacity, responders are expected to make on-scene management decisions as guided by County policies, and act as lead worker for all County agencies until another governmental entity or official takes control of the scene. Such on-scene decisions often carry significant financial and/or environmental consequences, and may involve life or death issues. The emergency response assignment requires availability for daytime and/or rotational after-hours on-call duty.

EXAMPLES OF DUTIES:

Conducts the more difficult inspections of hazardous waste generators and hazardous materials establishments that have been involved in a release or potential release incident. Reviews all aspects of hazardous materials management with plant managers on storage, processes, waste stream identification, characteristics, and identifies and recommends methods of preventing the reoccurrence of a release incident. Explains hazardous materials/waste rules and provides education and consultation to industries and agencies during and after an emergency response incident. Consults with the District Attorney and County Counsel concerning violations of regulations and laws as observed during the inspection of an incident in which legal actions could be taken against violators; maintains records of investigations may take photos and draw schematics of field sites. Serves as on-site emergency coordinator at a chemical or other public health related release/incident site and may represent the Division in responding to media inquiries during, and after a chemical release response.

DUTIES AND RESPONSIBILITIES OF AN EMERGENCY RESPONSE SPECIALIST AT THE SCENE OF AN INCIDENT

The roles and responsibilities of the County of San Diego, Department of Environmental Health (DEH) staff, during chemical, public health or environmental emergencies are defined as follows:

1) Ensure that responsible parties conduct appropriate environmental cleanups, as required by State and Federal regulations.

2) In compliance with Proposition 65 requirements, notify the County Board of Supervisors, Health Officer, and the general public of potential or actual hazardous chemical releases endangering the public.

The following are the roles and responsibilities that the Emergency Response Specialist performs as a member of the County's Emergency Response (ER) Team. These roles are not legally mandated as part of the Department of Environmental Health's responsibility, but are provided under a service agreement with outside agencies. These work activities are performed immediately as an extension of some of the Certified Unified Program Agencies duties in a cooperative effort between the Environmental Health and Fire hazardous materials teams, and on-scene Incident commanders. Operations are conducted in compliance with National Incident Management System protocols and utilize a unified command structure in the safest manner possible to expedite the resolution of an incident. The ER Specialist:

1) Serves as the lead person performing or assisting in the identification of unknown spilled materials at the scene of a chemical incident. In this capacity, the Specialist shall wear protective equipment appropriate to the incident requirements and shall enter the exclusion zone within the incident to take samples for testing. Staff will use various testing methods and procedures as a means to assess samples.

2) Evaluates the risk to public health and safety at all incident sites and advises the incident commander accordingly. Serves as subject matter expert and provides technical resources regarding the characteristics, and/or direct health and environmental effects of hazardous materials at the scene of an incident.

3) Assists the incident commander in determining the necessity for area evacuation and/or post-incident re-entry.

4) Tests/samples contaminated soil, water, air, food or biological materials during an emergency to determine the extent of contamination and provides information on public health concerns. When appropriate, arranges to provide analytical laboratory support on a routine or emergency basis, and obtains, labels, packages, and transports samples in accordance with EPA SW-846 requirements.

5) Provides the expertise to coordinate efforts to determine potential sources of a hazardous materials release, such as storm drain and sewer systems, underground tank leaks, etc., while working within the incident command system.

6) Uses computer data bases to access inventories of businesses under permit with DEH to evaluate potential sources for release in the area of a spill, and accesses information from Material Safety Data Sheets and other systems regarding a material or wastes makeup and hazards. Interprets all data obtained at the scene of an emergency as it applies to public health and safety concerns.

7) Provides information on safety and proper protective procedures for staff and the general public at the scene of an emergency.

8) Recommends site cleanup levels for incidents in which a hazardous material/waste might have contaminated a site and provides the information and/or time necessary to audit the adequacy of the cleanup both during and after a chemical or other emergency.

9) Assists the incident commander in obtaining financial or other resources to undertake a necessary cleanup. Acts in lead capacity when contacting State or Federal agencies for Superfund money and coordinates the resources necessary to accomplish the cleanup. Can provide information regarding options for the recycling or reuse of abandoned material.

10) Recognizes the need for and initiates enforcement action against responsible parties, while at the scene of a chemical, biological, radiological or food related emergency. Determines presence of, analyzes, and preserves evidence obtained following established procedures for chain of custody and sample preservation.

11) Provides on scene liaison with Regional Poison Control Centers, Emergency Medical Services, and other interested regulatory and oversight agencies. These can include the California Department of Health Services' (CDHS) Toxics Division, San Diego County Office of Emergency Services, the Federal Environmental Protection Agency (EPA), the United States Coast Guard, State and Federal Homeland Security offices, and other agencies.

MINIMUM QUALIFICATIONS:

Thorough knowledge of:

-- Use of personal protective equipment and clothing.
-- Principles and practices of environmental health.
-- Industry and community hazardous materials/waste management practices.
-- Water quality and solid waste management and resource conservation techniques.
-- Inspection and environmental sampling techniques and standards.
-- Federal, State and local laws and regulations applicable to hazardous materials management, infectious materials and environmental health.
-- Industrial manufacturing processes and materials with an understanding of industrial hygiene techniques.
-- Chemical and laboratory techniques to identify hazardous materials and epidemiological hazards.
-- Principles and field operation of the incident command system.
-- Responsibilities and regulatory purview of other environmental agencies that could be involved at the scene of a chemical incident response activity.
-- Responsibilities and regulatory purview of health related agencies involved in food safety (Cal Code Compliance)
-- Principles of biostatistics, hazardous material/waste management, Sanitation, chemical properties, ecology and toxicology.
-- Rules of evidence.

Skills and abilities to:

-- Conduct, complete and accurate hazardous materials inspections and investigations under stressful conditions.
-- Analyze inspections and investigation findings, and prepare complete reports and recommendations, which often are used for civil and criminal court actions.
-- Effectively perform a Hazard Categorization (HazCat) in the field with quick turn around required for answers.
-- Effectively use air-monitoring instrumentation in the field and then interpret the data for other agencies to utilize.
-- Effectively operate computers for data retrieval, both in the field and office environments.

-- Select appropriate personal protective clothing and equipment.
-- Effectively use specialized mitigation and control equipment under adverse conditions.
-- Effectively mitigate and direct mitigation activities under adverse conditions.
-- Communicate effectively in written and oral form.
-- Responsibly function as a Public Information Officer when necessary, during or after an emergency situation.
-- Handle difficult public contact situations and negotiate compliance points in an effective manner.
-- Deal effectively with industry; community groups and agencies to gain cooperation and resolve environmental management issues.
-- Command, lead, and influence others effectively during an incident. Take an active role at the incident.
-- Build consensus.
-- Make appropriate, timely decisions based on varied opinions.
-- Listen effectively.
-- Demonstrate self-confidence.
-- Effectively delegate
-- Effectively conduct hazard/risk appraisals under pressure

EDUCATION/EXPERIENCE:

DEH staff members who become part of the ER team are educated in the environmental sciences and are trained as chemical emergency responders. Staff are required to possess the following education and experience, or the equivalent, prior to being accepted for training as a member of the DEH Response team:

1) Bachelors or Masters Degree in an applied science, such as: Industrial Hygiene, Toxicology, Chemistry, Biochemistry, Biology, Geology or Environmental Health from an accredited institution.

2) A State professional license as a Registered Environmental Health Specialist (REHS) is strongly recommended prior to selection, and required for after hours assignment involving food or sewage issues.

3) Appointment at the minimum level of Hazardous Materials Specialist II, with a minimum of two years experience in environmental research, inspection or hazardous materials management work.

4) Experience in environmental auditing and enforcement, abandoned waste site mitigation, control, and cleanup practices are required prior to being considered as an emergency responder.

5) One year of County experience investigating industrial operations and manufacturing processes. This training should be obtained in DEH programs prior to being considered for training as part of the ER team.

SPECIAL NOTES, LICENSES, OR REQUIREMENTS:

License:

A valid, unrestricted California driver's license is required at the time of appointment. Employees may be required to use their personal vehicle.

Responders must be Registered Environmental Health Specialist's (REHS) in the State of California prior to responding to after business hours responses where the REHS Certification is required.

Working Conditions:

-- Exposure to hazardous substances
-- Must wear personal protective clothing during field activities
-- Exposure to adverse weather conditions
-- Will be required to work in all kinds of terrain.
-- Will be on-pager and on-call to respond to emergencies on a 24 hour rotational basis.
-- Will be required to engage in strenuous physical activities.
-- Will be required to submit to annual hazmat physicals, similar to those used by police officers (POST standards).
-- Will be required to handle and move hazardous materials which may include potentially infectious or radiological materials
-- Will be required to enter confined spaces.
-- Will be required to work odd hours and extended shifts.

TRAINING REQUIREMENTS

All DEH - Responders must be trained to the equivalent of a CalOSHA Technician, a minimum of 160 hours. All training will be done by California Certified instructors - in OSHA certifiable training programs. Response training includes:

a) Respiratory protection
b) Personnel protective equipment
c) Hazard recognition
d) Air monitoring and survey instruments
e) Sampling techniques
f) Site cleanup techniques and cleanup level determination
g) Chemical reference and documentation
h) Hazard Categorization procedure
i) Communications
j) Emergency vehicle operation
k) Incident command and HMD operations, policies and procedures
l) Environmental Law enforcement

PHYSICAL FITNESS:

On an annual basis, and prior to starting the physical agilities portion of this exam, candidates must complete the following, and receive written authorization from the examining physician that they are fit for duty.

1) Hazardous Materials Specialist's medical examination as amended for the response assignment,
2) Respirator fit testing,

Candidates must complete each of the following physical agility tests, under verifiable conditions:

1. Complete **one** of the following, at a verifiable location:

   a) Run 1 1/2 miles within 15 minutes. (6mph)

   b) Walk 3 miles within 45 minutes. (4mph)

   c) Bicycle 4 miles within 15 minutes (16mph)

2. The candidate shall successfully complete the Federal Fire Training Trailer or other team approved confined space obstacle course, while wearing an SCBA and recovering an object (doll), within 20 minutes or one tank of air.

3. The candidate shall while in Level B protective clothing complete, on an annual basis, an obstacle course designed to simulate job specific activities, within **20** minutes. All the following activities will be included in the course, with the order of these activities being determined by the location chosen for the course.
    a. Using appropriate equipment be able to upright a 55 gallon drum containing 40 inches of water. The drum shall be maneuvered a distance of 50 feet on a level asphalt or concrete surface. Where the candidate will load the drum on a drum dolly and return it to the starting point.
    b. Given a weight of 50 pounds (22.7 kg), shall lift the weight off a two-foot high bench, and carry the weight 100 feet (30.5 m) without stopping. The weight shall then be returned to a four-foot high bench. (This simulates carrying a bag of soda ash)
    c. Shall construct an appropriate containment berm using a complete ¼-yard (6.75 cu ft) of sand, dirt, or similar material.
    d. Shall be able to maneuver a course, consisting of hills, retaining walls, ladders, stairs, and move a 5-gallon bucket of water 50 feet.
    e. Shall travel 25 feet, passing through a 48" high tunnel, then return through the tunnel recovering a 150# dummy victim. This simulates a potential rescue situation during a hazmat or fire incident.

4. Responders shall operate effectively for extended periods of time in Personal Protective Equipment (PPE). Including Levels A-D and Structural Turnout clothing.

5. Responders shall demonstrate on an annual basis the proper donning and doffing procedures for self-contained breathing apparatus (SCBA) and Level B equipment. A challenge selection exposure chemical will be chosen by the response supervisor each year to perform this task against.

6. Responders shall successfully demonstrate on an annual basis that they can operate and understand the principles of and can interpret results produced by the instrumentation carried by the Environmental Health Department's Emergency Response team.

7. Responders skills, ability, physical fitness, or instrument expertise are all subject to more frequent evaluations if evidence indicates a deterioration of competence.

SELECTION CRITERIA

Staff selection for the Emergency Response team will be based on the following criteria:

-- Background; including education, work experience, past performance, and special technical abilities.

-- Physical Skills
    a) Ability to pass a medical as delineated by DEH.
    b) Successfully complete the physical agilities tests on an annual basis as outlined in the physical fitness section of this guideline.

-- Proficiency tests in the use of:
    a) Self Contained Breathing Apparatus (SCBA).
    b) Photoionization Detectors; Minirea models.
    c) Combustible Gas Meters (CGI).
    d) Radiation monitoring equipment.
    e) Colorimetric Indicator tubes
    f) Chemical test kits, (ie) Hazcat techniques.
    g) Selection of Personal Protective Equipment (PPE).

h) Familiar with and able to use quick sheets to operate the more technical equipment not routinely used by the team during significant incidents
i) Able to accessing computer databases from an ER vehicle.
j) Able to use the Communications equipment carried on response vehicles or used at a scene.
k) Demonstrate proficiency in the use of the Incident Command System.
l) Pass an annual hazmat physical
m) Able to effectively write a Notice of Violation in accordance with DEH guidelines.

-- Performance in an oral interview, held before a minimum panel of three. Staff will be rated in the following areas:

a) Ability to function on a team.
b) Ability to see all sides of an issue.
c) Ability to articulate and uphold the interests of the Department of Environmental Health
d) Ability to communicate and give directions to others, in an effective manner, both oral and written formats.
e) Ability to manage stress within themselves as well as try and control the stresses of others around them.
f) Ability to make decisions under time pressure; in stressful conditions.

PERFORMANCE STANDARDS

1) Able to pass initial and annual physicals, as described above.

2) Able to pass initial and annual physical agilities tests as described above.

3) Able to implement a safety and incident action plan.

4) Ability to classify, identify and verify known and unknown materials by using monitoring equipment available to them in the response vehicles or laboratory.

5) Able to effectively function within an assigned Hazmat role in the Incident Command System.

6) Able to select and use all levels of personal protective equipment safely and effectively.

7) Able to effectively use specialized hazmat equipment owned by the county's emergency response team.

8) Able to make appropriate hazard and risk assessments, while under pressure.

9) Able to perform advanced hazardous materials control operations within the capabilities of the resources and personal protective equipment available.

10) Able to select and implement appropriate decontamination procedures.

11) Able to appropriately complete written reports and records on field activities.

12) Able to understand basic chemical, biological, and radiological terms and their behavior.

13) Able to take a responsible, active role, in stressful, time sensitive situations, and perform as lead person effectively.

14) Will attend a minimum of 90% of monthly DEH-ER staff meetings, which are held on their regularly scheduled days. Unless excused by the chief of HMD.

15) Will attend a minimum of 50% of the sanctioned joint SDFD/HMD callback drills at the SDFD location determined. If provided with a minimum of 10 working days notice of the meeting date.

16) Will attend and participate in a minimum of 75% of the mandatory, quarterly DEH callback drills. Which are held on their regularly scheduled days. Unless excused by the chief of HMD.

17) Personnel will respond to all HIRT incidents in appropriate protective equipment or uniforms (i.e. coveralls, turnouts, or approved identifiable uniforms)

18) Will meet a maximum response time of 60 minutes for 90% of all hazardous materials incident dispatches, received from an appropriate agency.

19) Shall possess and maintain an active CPR and First Aide card.

20) Makes necessary and appropriate notifications to other agencies.

21) Able to interact with the media in an appropriate manner.

22) Able to drive all DEH-ER vehicles.

23) Able to complete a safety and incident action plan for a hazmat incident.

24) Maintain a Deputy Health officers badge in good standing.

ONGOING EVALUATION PROCESS FOR STAFF:

Staff will be tested annually on the following items that are necessary to safely and competently perform their duties as an Emergency Responder. Not all items will be directly tested each year, but selected or random topics will be evaluated near the same time period as the physical agilities testing. However staff understand that not being able to demonstrate or complete any of these items during the year, at an incident, may be grounds for re-evaluation or removal from the team.

Should a responder be unsuccessful in passing an ability, physical fitness, or instrument proficiency test on the first attempt they will be taken off the rotation list until they have successfully passed all tests being administered. This is due to the high reliance that DEH places on staff maintaining their competencies at all times.

1) Must pass annual medical exams and physicals, as described above.

2) Must pass annual physical agilities tests as described above within two attempts, which includes the initial group attempt.
   a) The second attempt must be made within 1 week of the last failed attempt unless there are medical issues that would preclude this and arrangements are made for an extension of the time.
   b) The entire agilities exercise must be completed as outlined above, not just the portion that could not be passed during the last attempt.

3) Must successfully classify, identify and verify known and unknown materials by using monitoring equipment.

4) Must select and use all levels of personal protective equipment effectively, based on situations or exercises encountered.

5) Must effectively use and understand the functions of specialized hazmat equipment owned by the county's emergency response team.

6) Must make appropriate hazard and risk assessments, while under pressure.

7) Must perform advanced hazardous materials control operations within the capabilities of the resources and personal protective equipment available.

8) Must understand, select and implement appropriate decontamination procedures for a variety of situations that are encountered.

9) Must appropriately complete and submit written reports and records on field activities within one week of the incident.

10) Must understand basic chemical, biological, and radiological terms and the behavior these materials exhibit at a scene.

11) Must take a responsible, active role, in stressful, time sensitive situations, and perform as lead person effectively.

12) Must attend a minimum of 90% of monthly DEH-ER staff meetings, which are held on their regularly scheduled days. Unless excused by the chief of HMD.

13) Must attend a minimum of 50% of the sanctioned joint SDFD/HMD callback drills at the SDFD location determined. If provided with a minimum of 10 working days notice of the meeting.

14) Will attend and participate in a minimum of 75% of the mandatory, quarterly DEH callback drills. Which are held on their regularly scheduled days. Unless excused by the chief of HMD.

15) Must respond to all HIRT incidents in appropriate protective equipment or uniforms (i.e., coveralls, turnouts or approved uniforms) at all times.

16) Will meet a maximum response time of 60 minutes for 90% of all hazardous materials incident dispatches, received from an appropriate agency.

17) Shall possess and maintain an active CPR and First Aide card.

18) Will make necessary and appropriate notifications to other agencies.

19) Will interact with the media in an appropriate manner.

20) Will operate all DEH-ER vehicles in a safe and appropriate manner.

21) Will complete a safety and incident action plan for a hazmat incident when required.

22) Will maintain a Deputy Health officers badge in good standing.

Appendix I

HIRT INCIDENT REPORTS

REPORT FORMATS ARE CHANGING IN 2011 WHEN NEW DATABASE IS BROUGHT ON LINE

Hazmat Incidence Response Team (HIRT)

HAZMAT INCIDENT RESPONSE REPORT HIRT# _____

DATE_____ TOTAL TIME ___:___/___:___/___:___ CHMIRS# _____ INCIDENT TYPE_____
A B C

INIT DISPATCH ___:___ SCENE ARRIVAL ___:___ SCENE DEPARTURE ___:___ RETURN HQTS ___:___ ADMIN ___:___

LOCATION

_____ _____ @ _____
STREET # STREET NAME CROSS-STREET

_____ _____ Y N _____
CITY ZIP INCORPORATED AREA TB BROS PG/COORD

JURISDICTION

FIRE DISTRICT_____ PHONE _____

RESPONDING AGENCIES AGENCY	CONTACT	HMD NAME	SDFD HAZMAT NAME
_____	IC_____	_____	CAPT_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RESPONSIBLE PARTY

(Enter all information for disposal follow-up and Billing processing)

NAME/CONTACT_____ DOB___/___/___ DRIVERS LIC# _____
COMPANY_____ H#_____
ADDRESS_____ PHONE_____
PROPERTY OWNER_____ PHONE_____
ADDRESS _____ APN_____

HAZARDOUS MATERIALS

CHEMICAL NAME	# OF CONTAINERS	TOTAL QTY	UNIT (Gal. Lbs)	QUANTITY RELEASED	DOT HAZARD CLASS (1-9)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

NARRATIVE

(Including circumstances initiating response)

SITE SAFETY PLAN: HMD SDFD FFD PHONE RESPONSE ONLY? Y N

FOLLOW-UP ACTION REQUIRED:

SUPERFUND ER# _____ MANIFEST_____ PROP 65: Y N

CLEANUP COMPANY _____

COPIES TO: ODP, SDFD HAZMAT _____ _____ _____

REPORT BY: AGENCY: HMD SDFD FFD COST RECOVERY: Y N

☐ Additional Information on Comments Page

INCIDENT CASUALTY REPORT

CONFIDENTIAL

Numbers of Persons Exposed _____

Potential Adverse Effects _____ Yes _____ No

Explain _____

Name/Address _____

Symptoms _____

Treated on Scene/Transported (Hospital) _____

(use additional sheets as necessary)

INVENTORY REPORT

VEHICLE(S)/ROUND TRIP MILEAGE: HM1_____ HM2_____ HM3_____ HM4_____ HM5_____ OTHER_____

LEVELS OF PROTECTION: (# Staff in each) Level A: _____ Level B: _____ Level C: _____ Level D: _____

MATERIALS, SUPPLIES, & SERVICES

Note: List amounts of all materials and supplies disposed/used as a result of this response. Check box if equipment, material and/or service is used during the incident. Please indicate size for all clothing used (S, M, L, XL, XXL). If individual equipment bag is supplied from van - note items on this report. If more than one supply item is utilized during the incident, please indicate the amount used.

_____APR Cartridge
_____APR Mask
_____Baggies
_____Banner Type
_____Contaminated H_2O, _____ Haz Waste
_____Batteries (AA, C, D, 6V)
_____Boot Covers (PVC, Tyvek)
_____Boots (Neoprene, PVC)
_____Camera (35 mm, Polaroid)
_____CGI
_____Chain (# of Feet)
_____Chlor-N-Oil Kit
_____Draeger Tube (type)
_____
_____
_____
_____Drum Liner
_____Drum _____Patch Kit
_____55 Gal, _____85 Gal
_____Duct Tape
_____Eye Wash
_____Film (35 mm, Polaroid)
_____Fire Extinguisher
_____Flashlight
_____Glass Sampling Rods
_____Gloves
_____Butyl
_____Latex
_____Leather
_____Neoprene, S
_____Neoprene, U
_____Nitrile, S
_____Nitrile, U
_____PVC, S
_____PVC, U
_____Rubber
_____Viton
_____Silver Shield
_____H-Nu
_____HAZCAT Test
_____Jar
_____Polyethylene
_____Flint Glass
_____4 oz. Urine
_____Lead Test Kit
_____NARKIT
_____Padlock
_____Paper Towels
_____PCB Test Kit
_____Pencils/Pens/Markers
_____pH Paper
_____Rope
_____Sanitizing Towelette
_____SCBA
_____# of Add'l Bottles
_____Spray Paint
_____Suits
_____Level A
_____Encapsulating B
_____Sigal (S M L XL XX)
_____Tyvek
Saranex (S M L XL XX)
PE (S M L XL XX)
_____Zip Lock Bag
_____Neutralizing Agents
_____Ammonia
_____Bleach
_____Soda Ash
_____Baking Soda
_____Sodium Bisulfide
_____TSP

_____:_____Telephone Time (Minutes)

OTHER/COMMENTS _____

INCIDENT ACTION AND SITE SAFETY PLAN

Date ____/____/____ Incident Location _____

ISOLATION ZONES Exclusion _____ Contamination Reduction _____ Support _____

NOTIFICATIONS (List Agencies) Check all that apply in the back of page four (4)

OTHER _____ **Prop 65** _____ (HMD)

IC _____ **Agency** _____

Incident Safety Officer _____ **Hazmat Group Supervisor** _____

Radio Channels: Incident _____ HIRT Group _____ Entry Team _____

IDENTIFICATION/HAZARD APPRAISAL: RISK ANALYSIS

Product Identification _____

_____

Primary Hazards _____

_____

ACTION PLAN (Incident Objectives)

1. _____
2. _____
3. _____
4. _____

(Additional HazMat Objectives)

1. _____
2. _____
3. _____
4. _____

Environmental Monitoring: CGI ☐ PID ☐ Radiological ☐ Colorimetric Tube ☐ Other _____

PERSONAL PROTECTION	**Level A**	**Level B**	**Level C**	**Turnouts**
Entry:	☐	☐	☐	☐
Backup/Rescue:	☐	☐	☐	☐
Decon:	☐	☐	☐	☐
Law Enforcement	☐	☐	☐	☐

DECONTAMINATION: # Pools _____ ☐ Eyewash ☐ Emergency

Solution Used: Water ☐, Soap/water ☐, TSP ☐, Chlorine ☐, Other ☐ _____

CONTAINMENT/CONTROL MEASURES _____

_____

Public Evacuation Yes ☐ No ☐ Shelter in Place Yes ☐ No ☐

Evacuation Assembly Point: _____

MEDICAL MONITORING

Medical Unit # _____ (Assigned to HazMat for Medical Monitoring)

Designated Medical Emergency Room _____

REPORT BY: _____ **AGENCY** _____

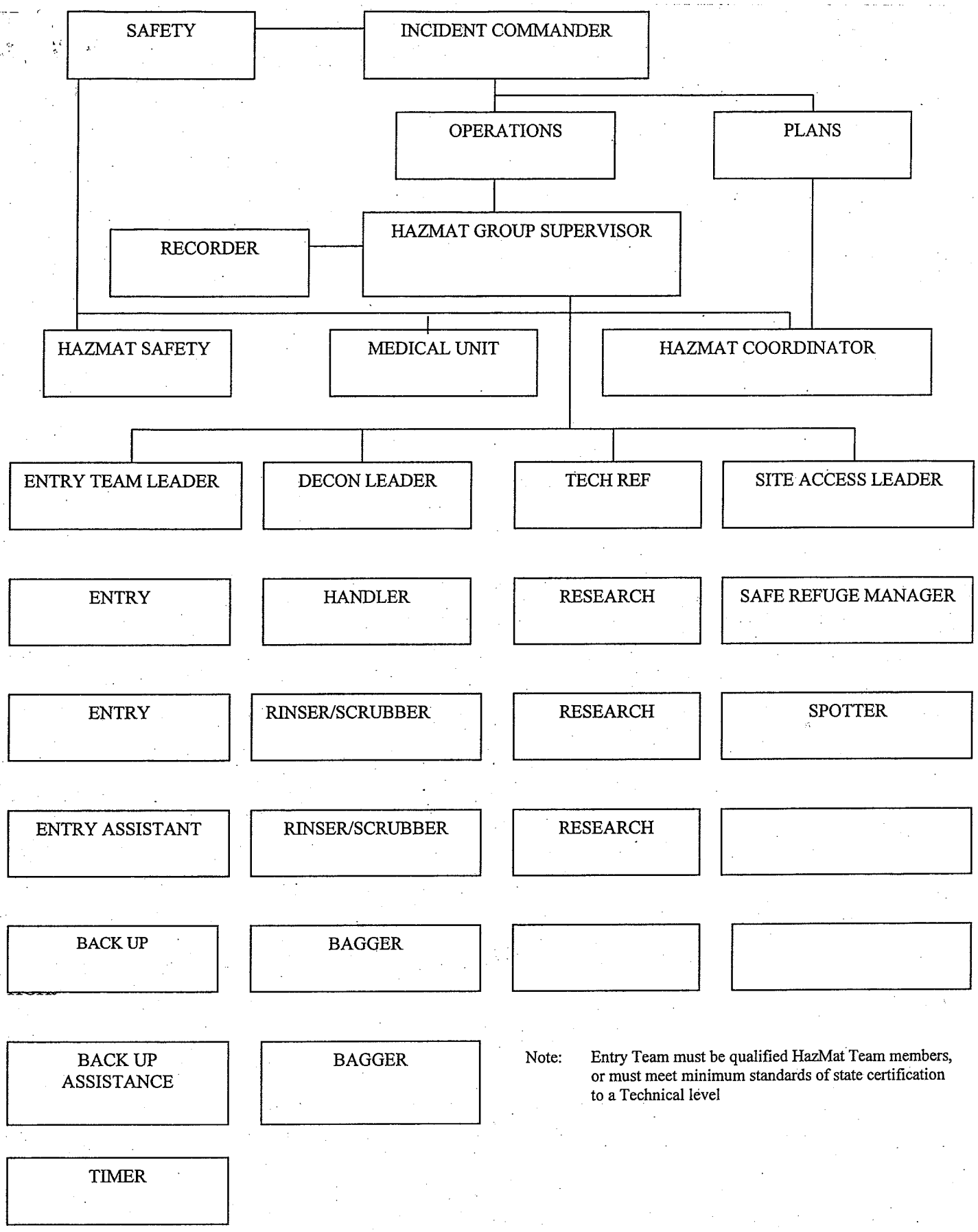
SITE MAP and ADDITIONAL COMMENTS: (SHOW WORK ZONES, EVACUATION PLAN, WITH STAGING AREA, EXITS, LOCATION OF BACK-UP STAFF, DECON SETUP, WIND DIRECTION, AND WHERE PROTECTIVE ACTIONS ARE TAKEN.)

FIRST RESPONDER CHECK LIST

- ☐ Evacuate
- ☐ Protective Action
- ☐ Rescue
- ☐ Containment & Control
- ☐ Notification
- ☐ Protective Actions
- ☐ Command Setup
- ☐ Decontamination
- ☐ Identification & Hazard Assessment
- ☐ Disposal
- ☐ Action Planning
- ☐ Documentation

	WEATHER		
TIME			
WIND DIRECTION	N W E S	N W E S	N W E S
WIND SPEED			

RESOURCES ORDERED	TIME	ETA	ATS	COMPANY/AGENCY CONTACT



Note: Entry Team must be qualified HazMat Team members, or must meet minimum standards of state certification to a Technical level

COUNTY OF SAN DIEGO
Hazardous Materials Division

(Page 1 of HARP completed on ___/___/___)

HAZARD APPRAISAL AND RECOGNITION PLAN (HARP) DAILY SITE VISIT FORM - B

SECTION A. Prepared by (Site Safety Officer) _____ Describe work performed _____
Date_____ Phone _____
Site Name_____
Site Visit Date_____ Time on Site (hours) _____

SECTION B. HMMD Personnel	**Protection Level**	**Duration PPE Worn (hours)**	**Activity Performed**
1.			
2.			
3.			
4.			
5.			
6.			

SECTION C. Describe Type of personal Protective Equipment Worn (Personnel identified by number used above)

1. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____
2. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____
3. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____
4. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____
5. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____
6. Clothing _____ Gloves _____ Respirator (cartridge) _____ Other _____

SECTION D. Did Respirator Breakthrough Occur? ☐ **Yes** ☐ **No** **Explain** _____

SECTION E. Survey Equipment Used and Readings Obtained

Instrument	**Location**	**Time**	**Reading**	**Description/Background**
1.				
ID No.				
Calib. Date				
2.				
ID No.				
Calib. Date				
3.				
ID No.				
Calib. Date				

SECTION F. Was personal monitoring conducted? ☐ Yes Type _____ ☐ No

SECTION G. Samples Collected _____

SECTION H. Indicate method(s) of decontamination of PPE/monitoring equipment/vehicles
Describe _____

SECTION I. Exposure symptoms? ☐ Yes ☐ No If yes, check items below, identify personnel by number used above

___ Nose/Throat Irritation ___ Faint/Dizzy ___ Eye Irritation ___ Other _____
___ Headache ___ Chills ___ Physical Injuries
___ Heat Stress ___ Skin Irritation ___ Nausea

Explanation (Identify personnel by number used above)

Person	Effects Reported To Supervisor Yes	Effects Reported To Supervisor No	Medical Treatment Given (Explain) Yes	Medical Treatment Given (Explain) No	Explanation

Please see reverse for instructions

HOW TO FILL OUT THE DAILY SITE VISIT DOCUMENT - FORM B

The following are very brief instructions for filling out this form. If you have further questions, ask your Supervisor.

Daily Site Visit Form

Section A: Each day that the site is visited, a new form is to be filled out. Accurately describe the work that was completed on this day.

Section B: Accurately describe the specific activity performed by each member of the team.

Section C: Be sure to write in numbers to identify which type of personal gear was worn by each team member [e.g., gloves--type: neoprene (1), (3), nitrile (2), (4)]. If any other type of personal protective equipment is used, identify it in "Other" column.

Section D: Explain any problems with personal protective equipment (e.g., tearing, ripping, difficulty with use). Identify person by number who experienced the problem.

Section E: Make sure each instrument is calibrated, and a background (off-site) reading is taken. Record the identification number for each instrument.

Section F: If personal monitoring was conducted, indicate what type. Attach copy of industrial hygiene audit.

Section G: Indicate what type and number of samples collected.

Section H: Describe decontamination method(s).

Section I: If exposure symptoms are experienced, identify person by number next to symptom. Also, notify IIPP Coordinator for HMMD of exposure symptoms and cause(s)!

County of San Diego

HMD Chain-of-Custody Record

Date _____ Page ____ of ____

Project Name _____

Reference _____

Address _____

_____

Samplers Signature _____

Samplers Printed Name _____

COPY OF LAB RESULTS MUST BE SENT TO:
Dept. of Environmental Health
Hazardous Materials Division
P.O. Box 129261
San Diego, CA 92112-9261

SAMPLE NO.	DATE	TIME	LOCATION	ANALYSIS REQUESTED: Title 22 Metals (TTLC)	Title 22 Metals (STLC)	pH	Flashpoint/Ignitibility	Other	SAMPLE TYPE: SOLID	LIQUID	GRAB	COMPOSITE	NO OF CONTAINERS	COMMENTS

HMD LAB CUSTODIAN (PRINT NAME)	DATE IN:	TIME IN:	HMD LAB CUSTODIAN (PRINT NAME)	DATE IN:	TIME IN:	HMD LAB CUSTODIAN (PRINT NAME)	DATE IN:	TIME IN:
HMD LAB CUSTODIAN (PRINT NAME)	DATE OUT:	TIME OUT:	HMD LAB CUSTODIAN (PRINT NAME)	DATE OUT:	TIME OUT:	HMD LAB CUSTODIAN (PRINT NAME)	DATE OUT:	TIME OUT:

① RELINQUISHED BY	Date	② RELINQUISHED BY	Date	③ RELINQUISHED BY	Date	Sample Conditions
Signature		Signature		Signature		Received On Ice Yes/No Tape Seal Intact Yes/No
Printed Name	Time	Printed Name	Time	Printed Name	Time	Special Shipment/Handling or Storage Requirements:
Company		Company		Company		
RECEIVED BY	Date	RECEIVED BY	Date	RECEIVED BY	Date	Split Sample Location:
Signature		Signature		Signature		
Printed Name	Time	Printed Name	Time	Printed Name	Time	Site Identification
Company		Company		Company		H # _____

DEH:HM-941 /00) * CUSTODIAN: NOTE ADDITIONAL IN/OUT DATES AND TIMES AS APPROPRIATE IN CC TS SECTION

County of San Diego
Departmer vironmental Health

County of San Diego

GARY ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377

JACK MILLER
ASSISTANT DIRECTOR

December 27, 2005

TO: County Communications
San Diego Fire Dispatch
Office of Emergency Services

FROM: Nick Vent, Supervising Environmental Health Specialist, Response Services
Hazardous Materials Division

NOTIFICATION OF HAZARDOUS MATERIALS STAFF AFTER BUSINESS HOURS

The Department of Environmental Health, Hazardous Materials Division (HMD) has Hazardous Incident Response Team (HIRT) personnel on 24-hour standby for the purpose of responding to hazardous materials incidents and other public health emergencies.

The following procedures are to be used to contact a Hazardous Material Specialist after normal business hours:

1. HAZARDOUS CHEMICAL EMERGENCIES

If a call regarding a chemical emergency (i.e., fire, explosion or ongoing hazardous material spill or release) is received by a regional fire jurisdiction or other governmental agency, they generally will request hazardous materials assistance by contacting San Diego Fire-Rescue Department Dispatch. The San Diego City HIRT will screen the call and then activate the County DEH-HIRT through County Communications. However, at times, County DEH-HIRT will receive and screen the initial call and will activate the San Diego City HIRT through San Diego Fire-Rescue Department Dispatch. In either case, both units will respond as required.

2. COMPLAINTS OTHER THAN EMERGENCIES

For situations involving complaints about hazardous chemicals or public health problems such as food poisonings, sewage releases, and contaminated water, contact County HMD staff directly by calling County Communications at (858) 565-5255 or (858) 565-2562 and request that a Hazardous Materials Specialist return your call. Be sure to leave your name and telephone number. When the specialist returns your call, be prepared to provide the complainant's name, telephone number, government agency (if applicable) and the nature of the incident. If you need assistance to determine the urgency of a complaint, contact the Hazardous Materials Specialist through County Communications.

If you do not receive a return call within ten minutes, call County Communications and request the backup Specialist on call. Again, please wait for ten (10) minutes for a return call.

If your office fails to receive a return call in the appropriate time, there is a backup phone "call-back" list of specialists available through County Communications ((858) 565-5255). Attached is an update of this list. It is organized by geographical area. Request that the dispatcher use that call-back list to obtain the needed assistance. Remember that the list should be used only in the event of "no contact" using the normal paging system.

If you have any questions, please contact Nick Vent, Supervising Environmental Health Specialist, Response Services, at (619) 338-2217.

Sincerely,

NICK VENT
Supervising Environmental Health Specialist
Response Services, HMD

cc: Gary Erbeck, Director, DEH
Jack Miller, Assistant Director, DEH
Mike Dorsey, Chief, HMD
Tom Amabile, OES

Appendix J

HAZARDOUS INCIDENT
RESPONSE TEAM
TRAINING MATRIX AND
EQUIPMENT/MANIPULATIVE
TRAINING TRACKER
SUMMARY REPORT(S)

DEPARTMENT OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS DIVISION
STAFF TRAINING - HEALTH AND SAFETY / EMERGENCY RESPONSE

TRAINING TYPE/DESCRIPTION	# CLASS HOURS	STAFF JOB CLASSIFICATION	DEPT. MANDATED	REGULATORY MANDATE	SPECIAL INFORMATION/ COURSE DESCRIPTION
Hazardous Waste Operations - Site Cleanup - Initial Health and Safety Orientation	24/8 Field	All Professional Staff	Yes	CRF 29 1910.120 "e" CCR Title 8	"HAZWOPERS" Health & Safety Training for Routine Site Employees (Minimal Exposure)
Hazardous Waste Operation- Site Cleanup: Annual Refresher	8	All Professional Staff Emergency Response Staff	Yes	Section S192 CFR 29 1910.120 "e"	Annual Refresher Worker Health and Safety
Emergency Response Haz Mat - Initial	160 State Certified Technician	Emergency Response Staff	Yes	CFR 29 1910.120 (q)	160 Hour course (State Certification) includes Haz Mat Technician and Haz Mat Specialist as defined in 29 CRF 1910.120
Emergency Response Upgrade	80 State Certified Specialist	Emergency Response Staff	Yes		80 Hours Specialist - State Certification & Certification as a State Haz Mat Instructor for Training Officer.
Emergency Response Haz Mat Annual Refresher	8 (Minimum) 80 Hours	Emergency Response Staff	Yes	CRF 29 1910.120 (q)	ER Annual Refresher may be more than 8 hours. Satisfies requirements in 29 CFR 1910.120 + Monthly & Quarterly call back drills.
Incident Commander - Scene Manager	24 State Certified Incident Commander	Emergency Response Staff with Field Incident Responsibilities and Supervisor of DEH-HIRT DEH-Supervisor HIRT	Yes	CFR 29 1910.120 (q)	On scene manager required of persons who may assume control beyond first responder awareness level: required of staff who control scene of chemical emergency following requirements established by state. CSTI or State Fire Marshall equivalent.
Hazardous waste operations - Site cleanup Health and Safety Supervisors / Managers	8	All Supervisors	Yes	CFR 29 1910.120 "e"	Required for supervisory and/or management employees responsible for routine site work with minimum exposures.
CPR	8/4 Bl-annual refresher	Emergency response staff and DEH HIRT Supervisor	Yes		
Respiratory Protection	6	All professional staff who wear respirators	Yes	CCR Title 8 Section 5144	Respiratory protection for field staff who must wear respirators as part of their job.
Waste Hazardous Classification - (All waste streams)	4	All professional staff	Yes	CCR Title 22 & Title 27	Required as part of 100 hours initial regulatory investigation techniques.

Blood Borne Pathogens	4-8	Emergency Response Staff and Supervisors. All professional staff.	Yes	CCR 5593 Title 8 Section 5193	
Ergonomic Health/Safety	4	All professional staff	Yes	CCR 5593 Title 8 Section 5110	
Injury/Illness Prevention	4-8 + Annual refresher	All professional staff	Yes	CCR Title 8 Section 3203	
Radiological Monitoring Safety	16-24	Emergency response staff	Yes	29 CFR 1910.120	Trains response staff in the use of radiological monitoring devices.
Cardio Pulmonary Resuscitation (CPR)	8 - Initial 4 - BI-annual refresher	ER & Selected professional staff	Yes		
Confined Space Entry Awareness	8 - 24	ER Staff & Selected professional staff	No	Calif H&S Code Title 8,Section 5156	Safety & Health Safety issues addressed for Emergency response in confined spaces.
Asbestos Awareness	8 Minimum	ER Staff & selected professional staff	Yes	Calif Health & Safety Title 8, Section 5208	

DEPARTMENT OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS DIVISION
STAFF TRAINING - ORIENTATION AND SKILL DEVELOPMENT

TRAINING TYPE	# CLASS HOURS	STAFF JOB CLASSIFICATION	DEPT. MANDATED	REGULATORY MANDATE	SPECIAL INFORMATION/DESCRIPTION
DEH Overview Cross Orientation	8	All professional staff	Yes		Cross orientation for Environmental Health. All program areas.
Analytical sampling and testing methods (Basic)	8 (Minimum)	All professional staff	Yes		Orientation training for soil/water, air, EPA/SW 846 protocols.
Collection & Preservation of field samples	8	All professional staff	Yes		Required due to CUPA responsibilities.
Collection & Preservation of Evidence	8	All professional staff	Yes		Required due to CUPA responsibilities.
Hazardous Waste Packaging & Transportation	8	Emergency response staff & selected professional staff			Health & Safety issues and how to package, transport & complete Hazardous Waste Manifest.
Inorganic/Organic Chemistry Review	8 (Minimum)	All professional staff/Admin staff	Yes		Review of basic principals-units of measure, inorganic/organic nomenclature (successful passage of pre-test fulfills requirements).
Correspondence/report preparation (Writing for results)	8-16	All professional staff/selected clerical/ all admin support	Yes		Skill enhancement in effective writing for correspondence and report preparation. Develop/improve written communication skills basic English course available through Regional Training Center.
Court Case Preparation	8-16	All professional staff	Yes		Policies, procedures required to develop effective enforcement cases for prosecution.
Environmental Health Haz Mat Inter Agency overview - review of county government	4	All professional, admin staff/selected clerical	Yes		Roles/responsibilities of Government agencies responsible for environmental, occupational and public health. Overview of our working relationships with other Environmental Enforcement Agencies/overview of County Government.
Effective Oral Communication	16	Supervisory/Management/ Admin/all designated in house instructors	Yes		Develop/enhance oral communication skills - Regional Training Center.
Electronic mail intro-computer communication/voice mail	4	All staff	Yes		Introduction into use of word perfect office/How to make

					effective use of o. /ord processing staff.
Introductory word processing - Spread sheets - Relational data bases	24	All professional staff and supervisory clerical admin	Yes		Introductory Microsoft office - Word, Excel, Access.
Basic/Intermediate and advanced word processing	12	Professional staff, Secretaries, Word Processing Staff	Yes		Basic-Advanced Microsoft office.
Dealing with difficult people	8	All staff	Yes		Dealing with upset public.
Public presentations using Microsoft PowerPoint Basic Intermediate & Advanced	8	All professional staff	Yes		Using Microsoft PowerPoint for presentation.
Under ground storage tanks	8-40	All professional staff	Yes	Calif H&S Code 25280	Inspection training for installation, leak detection, removal, lining, corrosion protection for USTS.
Above ground storage tanks	Note #1 below	All professional staff	Yes	Calif H&S Code 25270	Spills prevent and control - Code enforcement.
Pollution prevention	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
Medical waste generators	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
Hazardous materials release reporting	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
Tiered permitting requirements	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
Standards for business plans	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
Witness training	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.
How to issue field orders	Note #1 below	All professional staff	Yes	CUPA required	Inspection & required for Field Staff to meet CUPA mandated programs.

 Note #1 - Part of initial 100 hour training and on going training as necessary.

DEPARTMENT OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS DIVISION
STAFF TRAINING - MANAGEMENT AND SUPERVISORY TRAINING

TRAINING TYPE	# CLASS HOURS	STAFF/JOB CLASSIFICATION	DEPT. MANDATED	REGULATORY MANDATE	SPECIAL INFORMATION-DESCRIPTION
Interaction Management	24	All supervisors; managers, selected admin staff	Yes		Supervisory/Management skill development DEH.
Progressive Discipline	8	All supervisors; managers	Yes		Employee counseling skill/techniques used to discipline employee - to produce positive results.
Stress Management	2	All supervisors; managers	Yes		Techniques for identifying and managing stress - Regional Training Center.
Performance Evaluation	4	All supervisors; managers	Yes		Skills, techniques necessary to conduct personnel performance evaluations (DEH personnel).
Program Evaluation & Planning	8	All professional and administrative staff	Yes		Techniques for developing; evaluating effectiveness of the delivery of service associated with each program; workload analysis; staffing.
Time Management	8	All professional/admin; all supervisors; managers	Yes		Effective use of the work day. Regional Training Center.
Introduction to California Environmental Quality Act CEQA	4	Program coordinators	Yes		
Board Letter & CBPR Developments	4	Supervisors/Admin	Yes		Preparation of board letters.

Hazardous Incident Response Team
Training Tracker

May 2005

INTRODUCTION

The After Hours Emergency Response assignment requires specialized training and continual refresher training in order to ensure that the specialist maintains the skills necessary to complete the job. The purpose of this training tracker is to ensure that the specialist has met the minimum requirements needed to perform their duties and to inform the Emergency Response Supervisor what additional training is needed.

Each specialist is required to demonstrate proficiency in each area outlined in the tracker and will be verified by the ER Supervisor or the ER Technical III. This tracker can be modified as the job requirements change.

TRAINING TRACKER OUTLINE

I Basic requirements
- A REHS
- B Tech/Spec
- C CPR
- D Radiation Certification

II Annual Requirements
- A Physical Agility – Obstacle Course
- B Proficiency Test
- C Physical Fitness Test
- D County Physical Complete
- E Annual Performance Review
- F Blood borne Pathogen Refresher
- G Radiation Refresher
- H Asbestos Refresher

III Administrative Requirements
- TLDS Coding
- Report Writing
- Monday Pass Down
- Access to the S Drive
- Hepatitis Vaccine offered
- Coveralls-Blues
- Review MMST

IV HIRT Requirements
- A Equipment Usage & Maintenance
  - 1 Alexeter Strips
  - 2 CGI
  - 3 Colorimetric Tubes
  - 4 GCMS
  - 2 Guardian Reader
  - 5 Hand Tools
  - 6 Meso Systems
  - 7 Mini Rae
  - 8 Multi-Channel Analyzer
  - 9 Radiation Meters
- B Vehicle Usage
  - 1 Driver Safety Training
  - 2 Equipment Layout
  - 3 Transportation of Wastes
- C PPE Selection
  - 1 Levels of Protection
  - 2 Suits/Boots/Gloves

3 Respiratory Protection
4 SCBA vs. APR

D Evidence Sampling
1 Sampling Methods
2 Court Case Prep

E Decon
1 Decon Evolution
2 Decon Solutions

F Communication
1 Radios
2 Cellular Phone
3 Satellite Phone
4 Computer Use

G Tech/Ref & Health Risk Analysis
1 Information Sources
2 Risk Analysis

H Incident Command
1 ICS System

I Mitigation & Disposal
1 Plugging /Diking/Dams
2 Disposal Options

J Hazard Categorization

K Atropine Injections

J Prop 65 Requirements
1 Notifications/Postings
2 Making a report
3 Water Quality Sampling
4 Press Releases

V Other Requirements
A EPI Referrals
B Land Use/Code Compliance
C Vector
1 West Nile Virus

REQUIREMENTS TO BE ON DEH-HIRT

	Requirement	DATE	APPROVED
1	Registered Environmental Health Specialist		
2	HazMat Technician		
3	HazMat Specialist		
4	CPR		
5	Radiation Certification		
6	Additional Certificates/Comments		

Comments:

ANNUAL REQUIREMENTS

	REQUIREMENT	DATE	APPROVED
1	Run/Walk/Swim Physical Fitness Test		
2	Physical Agility/Obstacle Course		
3	Proficiency Test		
4	County Physical Complete		
5	Annual Performance Review		
6	Attendance at ER Staff Meetings and Callback Drills		
7	Radiation Refresher		
8	Blood Borne Pathogen Refresher		
9	Asbestos Refresher		

COMMENTS

ADMINISTRATIVE OVERVIEW

	REQUIREMENT	DATE	APPROVED
1	**TLDS Coding** Specialist knows what codes to use and how to code their time sheets.		
2	**Report Writing** Reports are completely filled out and in a timely manner. CHIMRS Numbers are required for reportable spills all HIRT responses. Standby logs are completely filled out.		
3	**Monday Pass Downs** Specialist must make appropriate referrals Monday after their weekend duty.		
4	**Hepatitis Vaccine Offered** Hepatitis A and B vaccines are offered by the county to all HIRT team members. You have a right to refuse the vaccine if you desire.		ACCEPTED or DENIED
5	**Coveralls Ordered**		
6	**MMST Reviewed & Badge, Bag Issued** Metropolitan Medical Strike Team is the San Diego County terrorism response team. As a member of HIRT you are a default member of MMST		
7	Card key issued, lab access, building 24 hr., parking privileges, red pass.		
8	County ID all access EmployeeACCESS1 1-04.doc ***Return to:*** *Kerry Vessels, Security Coordinator (Acting)* *County of San Diego* *Department of General Services* *Facilities Services* *5555 Overland Ave. Bldg. 2 Rm. 360* *San Diego Ca 92123* *(858)694-3552 Office* *(858)576-8245 Fax*		
9	Badge: record on log		
10	Computer access to the lab		

11	Respiratory class on line		
12	Alpha numeric pager and add to gang page 3819 at Sheriff Communications		

COMMENTS

_____

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HIRT REQUIREMENTS

Specialists are required to demonstrate knowledge and proficiency in the following HIRT related activities. Each area has specific topics that the Specialist is to know. Each Specialist will be able to demonstrate the different air monitoring equipment used, describe its functions and limitations, and interpret the results.

	REQUIREMENT	DATE	APPROVED
1	Equpment use and maintenance		
2	Vehicle Use		
3	PPE Selection & Use		
4	Mitigation & Disposal		
5	Tech/Ref & Health Risk Analysis		
6	Incident Command		
7	Sampling		
8	Decon		
9	Communication		
10	Hazard Categorrization		
11			

	Atropine Injections		
12	Prop 65		

COMMENTS

Other Requirements

COMMENTS_____

DETAILED ELEMENTS

BASIC REQUIREMENTS

1. Basic Requirements (REHS,Specialist,CPR,etc.)
    - Must be an EHS II or III and possess an REHS. Prior to being on call, must complete Hazmat Tech/Spec. Incident Command class and CPR certification must be completed within the year. Agrees to be a member of the MMST.

ANNUAL REQUIREMENTS

1. Physical Agility (O-Course/LMT Trailer)
    - Completes all aspects of obstacle course within allotted time. The course consists of stairs, retaining walls, ladders, and hills, a drum lift and carry, berm construction, 50-lb. weight lift and carry, and rescue tunnel. Elements to be completed while wearing Level B PPE.
    - While wearing an SCBA, can complete Level 3 of the Federal Fire Limited Mobility Trailer.
2. Proficiency Test
    - Demonstrates proficiency to ER Supervisor in all aspects of emergency response. This will be done by either an oral test or scenario completion.
3. Physical Fitness Test
    - Completes annual physical fitness test. Responder must be able to complete one of the following: Run 1.5 miles in 15 minutes, walk 3 miles in 45 minutes, or bicycle 4 miles in 15 minutes.
4. County Physical Complete including stress EKG test
    - Each responder must complete an annual County physical, which includes a stress EKG test.
5. Annual Respiratory Fit Test Complete
    - Each responder must complete an annual respiratory fit test.

ADMINISTRATIVE

1. General Job Performance Requirements
    - Must be familiar with and meet the job description detailed in the "Hazardous Materials Specialist Emergency Response Assignment" handout (dated 8/6/93).

2. Responding to a call
    - Answer pages and arrives on scene within the allotted time as per the HIRT contract.
    - Wears proper attire and shows proper attitude on all incidents.

3. After Hours Response Procedures
    - Is familiar with the "After Hours Response Procedures" guideline, dated 1/98.

4. Attendance Requirements
    - Must meet the minimum ER Staff meeting and Call Back drill attendance requirements. See attached.

5. Badge Use
    - Is familiar with badge use policy. See attached.

6. ARMS Coding/Standby Log
    - Knows appropriate codes to use when filling out time sheets and standby log.
    - Knows how to fill out the standby log.
    - Submits copies of ARMS sheet and standby log on time to ER Supervisor.

7. Report Writing/Referrals
    - Reports are written in a clear and concise manner.
    - Reports are fully completed (including CHIMR's report) and submitted in a timely manner.
    - All referrals are made the next working day to the appropriate agency.
    - Completes all follow-ups in a timely manner.
    - Completes Monday Pass Down in a timely manner.

8. MMST - Metropolitan Medical Strike Team
    - Agrees to be a member of the MMST
    - Is familiar with the MMST, its purpose and function. Attends all required training.

VEHICLE AND EQUIPMENT

1. Vehicle Use Guideline
    - Is familiar with the County's vehicle use guideline.

2. Vehicle Orientation & Equipment Layout
    - Knows where equipment is stored en each vehicle.
    - Knows where equipment is in the ER lab for restocking of the vehicle.
    - Notifies ER Lab Tech on equipment utilized, broken or malfunctioning equipment, and any needed items.

3. Equipment Usage (CGI,HnU,Rad Meters, Drager tubes, Hapsite, MiniRae, etc.)
    - Familiar with the use of all equipment utilized by ER.
    - Knows operating procedures for all air monitoring instruments used by ER.
    - Knows theory of operation and limitations for each instrument.
    - Can interpret the results.
    - Knows basic maintenance and is familiar with instrument calibration.
    - Knows how to use hand tools available. Familiar with intrinsically safe and spark resistance issues.

4. Equipment Maintenance
    - Can perform basic maintenance checks on all equipment used.
    - Notifies the ER Lab Tech of equipment failures the next day.

5. Communication (pagers, phones, radios, etc.)
    - Knows the County paging system and can perform a page from outside.
    - Knows how to use the cellular phone and cell phone policy.
    - Can operate radios, program radios, and knows appropriate language for radio use.
    - Can communicate with County Communications, Station M, via phone or radio.

SCENE MANAGEMENT

1. Incident Command
    - Has passed an IC course.
    - Knows how to function within the IC system.
    - Can assume any role as requested by the incident commander.

2. Site Safety
    - Can act as site safety or hazmat safety officer on incidents.
    - Can fill out site safety plan and ensures one is completed for each call.
    - Ensures that all operations are done safely.
    - Willing to stop an unsafe operation.
    - Able to determine work zones and act as site access leader.
    - Can assess a person's physical state that is wearing PPE (heat stress).
    - Knows own physical limitations.

3. Risk Analysis/TechRef
    - Able to research a chemical and complete a health risk analysis based on references.
    - Can select appropriate PPE based on this information.
    - Able to access the lap top computer and gather information.
    - Familiar with all databases carried by ER and how to use them.

4. PPE Selection
    - Knows the different types of PPE carried on each vehicle.
    - Knows the difference between Levels of protection and can select PPE accordingly.
    - Can select appropriate PPE based on chemical compatibility.
    - Knows how to properly don PPE.
    - Knows requirements for APR vs. SCBA.

5. Decon
    - Knows basic decon principles (Emergency decon vs. decon corridor).
    - Can assume any role on a decon team.
    - Can select an appropriate decon solution and handles waste solutions appropriately.

6. Scene Mitigation
    - Can function as a member of the entry team.
    - Knows basic mitigation techniques, such as plug and patch, damming and diking.
    - Can construct an overflow/underflow dam.
    - Is able to perform hazcat testing and waste determinations.

7. Waste Disposal/Transportation/Superfund
    - Has read and understood the waste disposal guideline (handout) and the County DPW Roads agreement regarding waste transportation from county maintained roads.
    - Knows how to transport wastes safely.
    - Knows procedures for accessing State Superfund/Clan Lab clean up funding.
    - Completes all appropriate paperwork for proper waste disposal.

8. Media Contacts
    - Has read and understands the County Media contact policy.
    - Knows how to conduct an interview.
    - Ensures that management is contacted and approval granted prior to granting an interview.

9. NOV/Court Case
    - Able to recognize potential court case while at an incident.
    - Knows how to take evidence samples under chain of custody and who the County's Lab is.
    - Able to document the incident with photographs.
    - Can prepare the case file for submission.
    - Writes clear and concise narratives.

10. Bloodborne Pathogens/Biohazardous Waste
    - Has read and understands the Emergency Response Bloodborne Pathogen Standard (handout).
    - Has either accepted the Hepatitis B vaccine or signed the declination form.
    - Knows how and where to dispose of biohazardous waste.
    - Handles biohazardous waste clean ups safely using appropriate PPE.

11. Radiation
    - Knows basic radiation concepts.
    - Can perform a risk assessment regarding radiation exposures.
    - Know radiation response procedures (handout).
    - Can use and interpret results from radiation monitors.

12. HazCat
    - Understands basic hazcat principles.
    - Can perform hazcats safely
    - Can determine course of action based on hazcat result (mitigation, risk analysis, etc.)

OTHER PROGRAMS/RESPONSES

1. Prop 65
   - Knows the difference between an immediate and routine Prop 65 notification.
   - Can determine if a media notification is warranted.
   - Can prepare a press release according to County guidelines.
   - Able to send out the press release using the Winfax program on the computer.
   - Also knows notification procedures if the computer is not working.
   - Ensures management is notified prior to making a press release.
   - Takes water samples, as needed, and delivers them to the Public Health Lab in a timely fashion.
   - Ensures Prop 65 Coordinator/Supervisor is informed on all after hours calls received.

2. CFH/Swimming Pools
   - Has read and understand response guidelines for responding to food establishments or public swimming pools.
   - Is able to take an initial food borne illness report.
   - Is able to give guidance for facility owners who have had fires in their establishments.

3. EPI
   - Takes information regarding Epi/TB calls and contacts the appropriate person on call for referral.

4. Land Use/Drinking Water
   - Takes all pertinent information and ensures appropriate referrals are made.

5. Stormwater
   - Recognizes stormwater issues vs. hazardous waste issues.
   - Makes appropriate referrals the next working day.

6. County Roads Response
   - Understands County Road Response Protocols. See attached.
   - Can request a Road Crew Supervisor as needed to verify response is under County Road Jurisdiction.
   - Handles waste disposal appropriately. Wastes either transported to a Division Headquarters or County Roads waste disposal contract is utilized.

7. Vector Control
   - Takes all pertinent information and ensures appropriate referrals are made.

8. Solid Waste
   - Takes all pertinent information and ensures appropriate referrals are made.

9. Border Issues/Indian Reservations
   - Responds to border issues appropriately.
   - Knows County Policy regarding notifications on incidents involving Mexico and Indian Reservations.
   - Knows County Policy regarding responses onto Indian Reservations.

COMMENTS

DC/06/25/99

SAN DIEGO FIRE DEPARTMENT

HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE TRAINING TRACKER

SUMMARY REPORT

THE HAZMAT TEAM MEMBER WILL BE RESPONSIBLE FOR DEMONSTRATING PROFICIENCY TO A STANDARD OF EIGHTY PERCENT (80%) IN THE FOLLOWING THREE AREAS:

1. THE QUARTERLY LESSON PLANS
2. EQUIPMENT OPERATIONAL EXPERTISE
3. MANIPULATIVE DRILL PROFICIENCY

NAME OF TECHNICIAN _____ DATE _____

SSN _____

TRAINING SUPERVISOR _____ DATE _____

SSN _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

QUARTERLY LESSON PLAN TRAINING TRACKER

SUMMARY REPORT

NAME OF TECHNICIAN _____

SSN _____

	DATE	EVALUATOR	TECH
FIRST QUARTER			
1. APPARATUS AND EQUIPMENT			
2. STANDARD OPERATING PROCEDURES			
3. LIBRARY			
4. RECOGNITION & IDENTIFICATION			
5. SCENE DOCUMENTATION & REPORTS			
SECOND QUARTER			
1. MONITORING & DETECTION EQUIPMENT			
2. CHEMICAL PROTECTIVE EQUIPMENT			
3. SELECTION & USE OF C.P.C.			
. WORK ZONES & DECONTAMINATION			
5. SAMPLING TECHNIQUES			
THIRD QUARTER			
1. CONTAINMENT/MITIGATION			
2. CHEMISTRY			
3. CORROSIVES/NEUTRALIZATION			
4. HAZ CAT			
5. TOXICOLOGY			
FOURTH QUARTER			
1. COMPUTER OPERATION			
2. SCENE MANAGEMENT			
3. LAWS			
4. RADIOLOGICAL			
5. REVIEW			

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

SUMMARY REPORT

NAME OF TECHNICIAN _____

SSN _____

NAME OF EQUIP/MANIPULATIVE DRILL

ANALYTICAL/DETECTION EQUIPMENT

CARBON MONOXIDE MONITOR: CO-7

CARBON MONOXIDE MONITOR: CO-82

COMBUSTIBLE GAS INDICATOR SCOTT S105:

COMBUSTIBLE GAS INDICATOR: GASTECH 1314

HALOGEN LEAK DETECTOR

RADIOLOGICAL MONITORING INSTRUMENTS:

ALPHA COUNTER PAC-1SA

GEIGER COUNTER: CDV-700

ION CHAMBER: CDV-715

DOSIMETER: CDV-138

DOSIMETER: CDV-742

DOSIMETER: XETEX-415A

DOSIMETER: CDV-750

HEAT DETECTOR: WAHL HEAT GUN

PHOTO IONIZING DEVICE: HNU PI 101

COLORMETRIC TUBES: BENDIX

COLORMETRIC TUBES: SENSIDYNE

COLORMETRIC TUBES: DRAGER

HAZ CAT KIT ___ (SEE PAGE V)

DATE	EVALUATOR	TECH

COMMUNICATION SYSTEMS

CELLULAR MOBILE TELEPHONE: MOTOROLA 2000X

FACSIMILE TELEPHONE SYSTEM: OMNIFAX G66i

SET-COM COMMUNICATION SYSTEM

PORTABLE RADIO: BENDIX/KING

PORTABLE RADIO: GENERAL ELECTRIC

DATABASES:

HAZARDLINE (SEE PAGE V)

HEALTH DEPT. (SEE PAGE V)

CONTAINMENT EQUIPMENT

HAZORB ABSORBENT (SEE PAGE V)

IMBIBER ADSORBENT PADS (SEE PAGE V)

CHLORINE KIT A

CHLORINE KIT B

CHLORINE KIT C

PLUG N' DIKE

VETTER BAG SYSTEM

PERSONAL PROTECTIVE EQUIPMENT

ENCAPSULATING SUITS:

TRELLCHEM: VITON/BUTYL

TRELLCHEM: BUTYL

LIFEGUARD: RESPONDER

COLD PROTECTIVE OVERSUITS

PROXIMITY SUITS

COOLHEAD (MICROCLIMATE SYSTEM)

DATE	EVALUATOR	TECH

MANIPULATIVE PROFICIENCY EXERCISE	DATE	EVALUATOR	TECH
AIR DRILL			
AWNING			
DECON STATION SET-UP			
DECON SAFETY SHOWER SYSTEM			
ONAN GENERATOR			
SAN DIEGO CITY STORM DRAIN MAPS			
SAMPLING COLLECTION TECHNIQUES			
BINOCULARS/SPOTTING SCOPE			
GROUNDING RODS/GROUNDING WIRES			
COOLING AIR SYSTEM (MANIFOLD, CYLINDER, ETC.)			
PORTABLE EXTINGUISHERS			
COLLAPSIBLE LADDER			
WEATHER STATION			
INFORMATION MANAGEMENT SYSTEMS			
CAMERA: 35 MILLIMETER (SEE PAGE V)			
CAMERA: POLAROID (SEE PAGE V)			
CAMERA: VIDEO (BETA) (SEE PAGE V)			
COMPUTERS:			
COMPAQ DESKTOP (SEE PAGE V)			
COMPAQ LAPTOP (SEE PAGE V)			
SAS COMPUTER (SEE PAGE V)			
REPORTS:			
C.H.M.I.R.S. (SEE PAGE V)			
PROPOSITION 65 (SEE PAGE V)			
SAS INCIDENT REPORT (SEE PAGE V)			

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERTALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

SUMMARY REPORT

NAME OF TECHNICIAN _____ DATE _____

SSN _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL

QUARTERLY LESSON PLANS

THE FOLLOWING ITEMS ARE TO BE EVALUATED AND SIGNED OFF IN CONJUNCTION WITH SUCCESSFUL COMPLETION OF THE QUARTERLY LESSON PLANS.

		DATE	EVALUATOR	TECH
1. HAZ MAT REPORTS	(1ST QTR LESSON PLAN)			
2. ABSORBANT/ADSORBANT	(2ND QTR LESSON PLAN)			
3. HAZ CAT KIT	(3RD QTR LESSON PLAN)			
4. COMPUTER DATA BASES	(4TH QTR LESSON PLAN)			

SIGNATURE OF TRAINING SUPERVISOR _____ DATE _____

SSN _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

TECHNICIAN PERFORMANCE EVALUATION

NAME OF TECHNICIAN _____ DATE _____

___UNSATISFACTORY ___BELOW STANDARD ___SATISFACTORY

___ABOVE STANDARD ___OUTSTANDING

COMMENTS: _____

TECHNICIAN SIGNATURE _____ DATE _____

SSN _____

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SSN _____

SAN DIEGO FIRE DEPARTMENT

HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE

PROFICIENCY TRACKER

GUIDE SHEET

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CARBON MONOXIDE DETECTOR: CO-7

_____ 1. GIVE NAME OF DETECTION EQUIPMENT.

_____ 2. DESCRIBE USE OF DETECTION EQUIPMENT.

_____ 3. DESCRIBE INDICATIONS FOR EQUIPMENT USE.

_____ 4. CONNECT HOSE & PROBE TO SAMPLE INLET.

_____ 5. TURN POWER ON, CHECK FLOW INDICATOR, AND VISUALIZE THE FOLLOWING DISPLAYS:
   A) BATT CHK (MIN 4.6 V)
   B) CK PROBE CONNECT
   C) SELF DIAGNOSIS
   D) AUTO/ZERO SPAN
   E) STANDBY

_____ 6. DEMONSTRATE USE OF PANEL CONTROLS:
   A) AVG. 1,3,15 MINUTES & CURRENT READING
   B) PEAK HOLD
   C) BATT. CK.

_____ 7. DEMONSTRATE ABILITY TO CALIBRATE INSTRUMENT.

_____ 8. DESCRIBE THE FOLLOWING MAINTENANCE PROCEDURES FOR THE CO-7:
   A) ROUTINE MAINTENANCE
   B) CELL MAINTENANCE
   C) SUBASSEMBLY REMOVAL

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CARBON MONOXIDE DETECTOR: CO-82

_____ 1. GIVE NAME OF DETECTION EQUIPMENT.

_____ 2. DESCRIBE USE OF DETECTION EQUIPMENT.

_____ 3. DESCRIBE INDICATIONS FOR EQUIPMENT USE.

_____ 4. TURN POWER ON. SET INSTRUMENT TO "000" WITH THE ZERO ADJUSTMENT.

_____ 5. TEST AUDIBLE ALARMS:
A) 50-150 (PPM) - PULSING ALARM
B) OVER 150 (PPM) - STEADY ALARM

_____ 6. DEMONSTRATE ABILITY TO CALIBRATE INSTRUMENT.

_____ 7. DEMONSTRATE ABILITY TO REPLACE SENSORS.

_____ 8. IDENTIFY TLV & PHYSICAL PROPERTIES OF CO:
TLV-50PPM
VAPOR DENSITY-0.97
LEL-12.5%-UEL-74.2%

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

SCOTT S105 COMBUSTIBLE GAS & OXYGEN DETECTION INSTRUMENT

____ 1. REVIEW INSTRUMENT OPERATION AND CALIBRATION MANUALS.

____ 2. GIVE NAME OF DETECTION EQUIPMENT.

____ 3. STATE TYPE OF GASES THAT CAN BE DETECTED.

____ 4. STATE THE SENSITIVITY RANGES AND UNITS OF MEASUREMENTS FOR THE INSTRUMENT.

____ 5. DESCRIBE THE INSTRUMENTS POWER SOURCE.

____ 6. EXPLAIN THE MEANING OF "LOBAT" DISPLAY.

____ 7. DEMONSTRATE AND EXPLAIN THE FUNCTIONS OF EACH OF THE FOLLOWING SWITCHES:
- ___ ON/OFF
- ___ % LEL
- ___ % 02
- ___ HOLD
- ___ LT

____ 8. DESCRIBE THREE OCCASIONS WHEN THE AUDIBLE ALARM IS ACTIVATED.

____ 9. STATE PROCEDURE FOR RESETTING AUDIBLE ALARM AND DIGITAL DISPLAY.

____ 10. DEMONSTRATE THE ABILITY TO CALIBRATE THE INSTRUMENT UTILIZING A CALIBRATION MANUAL AND APPROPRIATE GAS.

____ 11. IDENTIFY THE 02 AND COMBUSTIBLE GAS SENSORS AND DESCRIBE THE PROCEDURES FOR THEIR REPLACEMENT.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

COMBUSTIBLE GAS INDICATOR: GASTECH 1314

_____ 1. REVIEW INSTRUMENT OPERATION AND CALIBRATION MANUALS.

_____ 2. GIVE NAME OF DETECTION EQUIPMENT.

_____ 3. STATE ALL APPROPRIATE SAFETY PRECAUTIONS (DO NOT USE IN HALOGENATED HYDROCARBON AREAS) (DO NOT CONTAMINATE PROBE WITH HAZARDOUS CHEMICAL).

_____ 4. TURN THE EQUIPMENT ON (PUSH POWER BUTTON).

_____ 5. ALL FIVE (5) MINUTES FOR EQUIPMENT TO WARM-UP.

_____ 6. PERFORM BATTERY CHECK (PUSH BATTERY BUTTON).

_____ 7. CHECK OXYGEN CALIBRATION (PUSH OXY-IN BUTTON).

_____ 8. ADJUST NEEDLE TO READ ON "OXY CAL" LINE ON METER.

_____ 9. TURN OXY CAL KNOB COUNTERCLOCKWISE (LIGHT & ALARM SOUNDS AT 19.5%, LOW OXY INDICATION).

_____ 10. TURN OXY CAL KNOW CLOCKWISE (ALARM SOUNDS AT 25%, OXY ENRICHED ATMOSPHERE).

_____ 11. CHECK PPM/LEL ALARM SETTINGS
(PUSH PPM/LEL BUTTON TO THE IN "PPM" POSITION)
(ADJUST PPM/LEL KNOB TO ZERO THE NEEDLE)
(PUSH PPM/LEL BUTTON TO THE OUT "LEL" POSITION)
(TURN PPM/LEL KNOB SO NEEDLE READS ABOVE 20%, LIGHT & ALARM SOUNDS AT 20% LEL)

_____ 12. DEMONSTRATE THE ABILITY TO CHANGE SENSORS
_____ OXYGEN SENSOR
_____ COMBUSTIBLE GAS SENSOR

_____ 13. DEMONSTRATE THE ABILITY TO CALIBRATE THE INSTRUMENT.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

AUTOMATIC HALOGEN LEAK DETECTOR: ITF 5600

____ 1. REVIEW INSTRUMENT INSTRUCTION MANUAL.

____ 2. GIVE NAME OF DETECTION EQUIPMENT.

____ 3. STATE THE FAMILY OF GASES THAT CAN BE DETECTED.

____ 4. STATE WHY ETHYLENE OXIDE GAS LEAK CAN BE DETECTED.

____ 5. TURN POWER ON.
RED L.E.D. LIGHT LIGHTS
INSTRUMENT GIVES A BEEPING SOUND
ALLOW INSTRUMENT TO STABILIZE (5 OR 6 BEEPS)

____ 6. STATE WHAT WILL OCCUR IF A LEAK IS FOUND THE BEEPING SOUND INCREASES IN RATE THE RED L.E.D. LIGHTS WILL FLASH.

____ 7. STATE THE PURPOSE OF THE RESET BUTTON ON THE PROBE ALLOWS FOR FAST SENSOR RECALIBRATION IN CONTAMINATED ATMOSPHERE.

____ 8. STATE THE SENSITIVITY RANGE OF THE INSTRUMENT RESPONDS TO MINUTE TRACES OF HALOGEN 3 PARTS PER MILLION (PPM).

____ 9. STATE THE PURPOSE OF L.E.D. LEAK LEVEL INDICATORS INDICATES THE CONCENTRATION OF THE LEAK.

____ 10. DEMONSTRATE THE ABILITY TO CHANGE SENSOR TIP.

____ 11. DEMONSTRATE THE ABILITY TO CHANGE BATTERIES.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CDV 700 GEIGER COUNTER

_____ 1. REVIEW RADIOLOGICAL PRINCIPLES.

_____ 2. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL DETECT.

_____ 3. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 4. STATE THE RANGE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 5. INSTALL BATTERIES **(INSTRUMENT MUST BE OFF).**

_____ 6. TURN TO THE (X10) SCALE, ALLOW THE INSTRUMENT TO WARM UP FOR 30 SECONDS.

_____ 7. OPEN THE SHIELD ON THE PROBE.

_____ 8. PLACE THE PROBE ON THE CHECK SOURCE.

_____ 9. OBSERVE THE READING.

_____ 10. TURN TO THE MOST SENSITIVE SCALE (X1) TO TAKE READINGS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CDV 715 ION CHAMBER

_____ 1. REVIEW RADIOLOGICAL PRINCIPLES.

_____ 2. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL DETECT.

_____ 3. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 4. STATE THE RANGE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 5. INSTALL BATTERIES.

_____ 6. TURN TO THE ZERO SCALE, ALLOW THE INSTRUMENT TO WARM UP FOR TWO (2) MINUTES.

_____ 7. TURN TO THE CIRCUIT CHECK POSITION.

_____ 8. THE NEEDLE READS IN THE RED AREA ON THE METER.

_____ 9. TURN THE SELECTOR SWITCH THROUGH THE SETTINGS.

_____ 10. THE NEEDLE SHOULD SHOW AN UP SCALE DEFLECTION.

_____ 11. TURN TO THE MOST SENSITIVE SCALE (X0.1) TO TAKE READINGS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CDV 138 DOSIMETER

_____ 1. REVIEW RADIOLOGICAL PRINCIPLES.

_____ 2. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 3. STATE THE RANGE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 4. WHY IS THIS YOUR MOST IMPORTANT RADIOLOGICAL INSTRUMENT?

_____ 5. HOLD DOSIMETER UP TO A LIGHT SOURCE TO READ SCALE.

_____ 6. READ SCALE IN A HORIZONTAL POSITION.

_____ 7. EXPLAIN WHAT HAPPENS IF DOSIMETER IS READ IN A POSITION OTHER THAN HORIZONTAL.

_____ 8. EXPLAIN WHY IT IS RISKY TO READ THE DOSIMETER WITH THE DOSIMETER CHARGER.

_____ 9. EXPLAIN THE SAFE WAY TO READ THE DOSIMETER WITH THE DOSIMETER CHARGER.

_____ 10. ZERO THE DOSIMETER USING THE DOSIMETER CHARGER.

_____ 11. DEMONSTRATE WHAT TO DO IF YOU CAN NOT FIND THE HAIRLINE.

_____ 12. EXPLAIN WHAT TO DO IN AN EMERGENCY IF YOU CAN NOT ZERO THE DOSIMETER, BUT IT IS READING BELOW 50% OF FULL SCALE.

_____ 13. WRITE READING ON EXPOSURE RECORD.

_____ 14. HOW MANY DOSIMETERS SHOULD BE WORN INTO THE HOT ZONE.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CDV 742 DOSIMETER

_____ 1. REVIEW RADIOLOGICAL PRINCIPLES.

_____ 2. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 3. STATE THE RANGE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 4. WHY IS THIS YOUR MOST IMPORTANT RADIOLOGICAL INSTRUMENT?

_____ 5. HOLD DOSIMETER UP TO A LIGHT SOURCE TO READ SCALE.

_____ 6. READ SCALE IN A HORIZONTAL POSITION.

_____ 7. EXPLAIN WHAT HAPPENS IF DOSIMETER IS READ IN A POSITION OTHER THAN HORIZONTAL.

_____ 8. EXPLAIN WHY IT IS RISKY TO READ THE DOSIMETER WITH THE DOSIMETER CHARGER.

_____ 9. EXPLAIN THE SAFE WAY TO READ THE DOSIMETER WITH THE DOSIMETER CHARGER.

_____ 10. ZERO THE DOSIMETER USING THE DOSIMETER CHARGER.

_____ 11. DEMONSTRATE WHAT TO DO IF YOU CAN NOT FIND THE HAIRLINE.

_____ 12. EXPLAIN WHAT TO DO IN AN EMERGENCY IF YOU CAN NOT ZERO THE DOSIMETER, BUT IT IS READING BELOW 50% OF FULL SCALE.

_____ 13. WRITE READING ON EXPOSURE RECORD.

_____ 14. HOW MANY DOSIMETERS SHOULD BE WORN INTO THE HOT ZONE.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

DIGITAL DOSIMETER - XEXTEX-415A

_____ 1. INSTALL "9 VOLT" BATTERY.

_____ 2. TURN THE INSTRUMENT TO THE "ON" POSITION.

_____ 3. TURN THE CHIRP RATE TO LOW OR HIGH RANGE.

_____ 4. DEPRESS THE BUTTON TO READ THE ACCUMULATED DOSAGE OF GAMMA RADIATION.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CDV 750 DOSIMETER CHARGER

_____ 1. REVIEW RADIOLOGICAL PRINCIPLES.

_____ 2. STATE THE TYPE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 3. STATE THE RANGE OF RADIATION THE INSTRUMENT WILL MEASURE.

_____ 4. STATE THE PRIMARY USE OF THE DOSIMETER CHARGER.

_____ 5. DEMONSTRATE HOW TO USE THE DOSIMETER CHARGER IN A DARK ENVIRONMENT TO SAFELY READ THE DOSIMETER.

_____ 6. INSTALL THE BATTERY AND DEMONSTRATE HOW TO ZERO THE DOSIMETER.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

INFRARED THERMOMETER: WAHL HEAT SPY

_____ 1. REVIEW INSTRUMENT INSTRUCTION MANUAL.

_____ 2. GIVE NAME OF DETECTION EQUIPMENT.

_____ 3. DESCRIBE USE OF DETECTION EQUIPMENT.

_____ 4. STATE TEMPERATURE OPERATING RANGE DISPLAY READS 0 - 9999, DASHES _____ APPEAR WHEN READING IS OUT OF INSTRUMENTS RANGE.

_____ 5. DESCRIBE INSTRUMENTS POWER SOURCE. ONE NINE (9) VOLT ALKALINE BATTERY LOCATED IN BASE OF HANDLE OF INSTRUMENT REPLACE WHEN "LOW BATT" IS DISPLAYED.

_____ 6. TEST FOR OPERATIONAL READINESS ROTATE SELECTOR SWITCH TO SELF-TEST POSITION DEPRESS TRIGGER FLASHING TEMPERATURE INDICATES SELF-TEST IS O.K. "HLP" DISPLAY INDICATES FAILED TEST.

_____ 7. CHECK EMISSIVITY SETTING SET TO 0.9 FOR MOST SOLID OBJECTS REFER TO INSTRUCTION MANUAL FOR ADDITIONAL VALUES.

_____ 8. ROTATE SELECTOR SWITCH FOR "READ" DEPRESS TRIGGER ARM OUTSTRETCHED AIM (USE TARGETS).

_____ 9. DESCRIBE PURPOSE OF "PEAK" SETTING. HIGHEST TEMPERATURE READ IS HELD ON DISPLAY AS LONG AS TRIGGER REMAINS DEPRESSED.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

PHOTOIONIZING DETECTION DEVICE: HNU

_____ 1. COMPLETED THE SECOND QUARTER LESSON NUMBER ONE (MONITORING AND DETECTION EQUIPMENT) AND PASSED THE QUIZ FOR THAT LESSON.

_____ 2. CORRECTLY IDENTIFIED THE EQUIPMENT, IT'S KEY PARTS AND OPERATING CONTROLS.

_____ 3. DESCRIBES THE PRINCIPLES OF IONIZATION POTENTIAL AND THE INSTRUMENT'S ABILITY OR INABILITY TO DETECT A GIVEN SUBSTANCE.

_____ 4. PROPERLY ATTACHES THE PROBE TO THE INSTRUMENT.

_____ 5. DESCRIBES THE DANGERS ASSOCIATED WITH UV LIGHT.

_____ 6. CORRECTLY ADJUSTS INSTRUMENT FOR OPERATION.

_____ 7. PROPERLY OUTLINES THE CARE AND MAINTENANCE OF THE INSTRUMENT AND PROBE.

_____ 8. CORRECTLY INTERPRETS THE INFORMATION ATTAINED BY THE INSTRUMENT.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

COLORMETRIC TUBES WITH PUMPING DEVICE

_____ 1. COMPLETED THE SECOND QUARTER LESSON NUMBER ONE (MONITORING AND DETECTION EQUIPMENT) AND PASSED THE QUIZ FOR THAT LESSON.

_____ 2. CORRECTLY IDENTIFIED THE EQUIPMENT, IT'S KEY PARTS AND OPERATING CONTROLS (INCLUDING THE PREHEATING UNIT).

_____ 3. DESCRIBES THE PRINCIPLES OF DETECTION USING THE COLORMETRIC TUBES.

_____ 4. PROPERLY ATTACHES THE COLORMETRIC TUBE TO THE PUMP AND/OR THE EXTENSION TUBING.

_____ 5. PROPERLY ASSEMBLES THE COLORMETRIC EQUIPMENT USING THE PREHEATING UNIT.

_____ 6. PROPERLY OUTLINES THE CARE AND MAINTENANCE OF THE INSTRUMENT AND THE ASSOCIATED EQUIPMENT.

_____ 7. CORRECTLY INTERPRETS THE INFORMATION OBTAINED BY THE INSTRUMENT.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CELLULAR TELEPHONE

_____ 1. ABLE TO INITIATE A CALL ON THE CELLULAR TELEPHONE USING THE NUMBERED KEY PAD AND THE SPEED DIALER.

_____ 2. TURN THE CELLULAR TELEPHONE ON, OVERRIDING THE SECURITY LOCK FEATURE.

_____ 3. ADJUST THE VOLUME.

_____ 4. ACTIVATE THE ALERT (EXTERNAL ALARM) FUNCTION.

_____ 5. LOCATE THE RESOURCE MANUAL FOR IMPORTANT TELEPHONE NUMBERS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

FACSIMILE MACHINE (FAX)

_____ 1. TURN ON FAX.

_____ 2. IDENTIFY THE KEY FEATURES ON THE CONTROL PANEL. SEE USERS GUIDE FOR INSTRUCTIONS.

_____ 3. RELOAD PAPER SUPPLY INTO THE MACHINE.

_____ 4. DEMONSTRATE THE ABILITY TO SEND A FAX MESSAGE USING THE NUMBERED KEY PAD AND SPEED DIALER.

_____ 5. DEMONSTRATE THE ABILITY TO MAKE COPIES USING THE FAX.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

SETCOM

_____ 1. IDENTIFY THE DIFFERENT SETCOM ADAPTOR PLUGS FOR THE PORTABLE RADIOS.

_____ 2. IDENTIFY THE KEY FEATURES OF THE SETCOM UNIT.

_____ 3. DEMONSTRATE THE ABILITY TO PLACE THE SETCOMS IN SERVICE.

_____ 4. SPECIFY THE APPROPRIATE RADIO FREQUENCY FOR USE OF THE SETCOMS.

_____ 5. DESCRIBE THE MAINTENANCE PROCEDURES AND RECORDS FOR THE SETCOMS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

PORTABLE RADIOS (KING AND GE)

____ 1. IDENTIFY THE CONTROL FEATURES OF EACH RADIO AND DEMONSTRATE THEIR PROPER USE.

____ A. ANTENNA: DO NOT ATTEMPT TO TRANSMIT WITH A DAMAGED OR MISSING ANTENNA.

____ B. CG-SQ: WITH THIS DIAL TURNED COUNTER-CLOCKWISE PAST THE CLICK THE CG IS ON. TO TURN CG OFF TURN DIAL CLOCKWISE AND ADJUST THE SQUELCH MANUALLY.

____ C. OFF/VOL: THIS DIAL SERVES AS AN ON/OFF SWITCH AND VOLUME CONTROL.

____ D. HI/LO: TRANSMISSION OUTPUT POWER CONTROL (HI 5 WATTS, LOW 1.5 WATTS) USING THE LOW SETTING WILL CONSERVE BATTERY POWER SUPPLY WHEN THE HI SETTING IS NOT NEEDED.

____ E. SCAN: SCANS ALL CHANNELS PROGRAMED FOR SCANNING.

____ F. PRI: PRIORITIES THE CHANNEL RECEIVED TO THE SELECTED CHANNEL SHOWN ON THE SELECTOR DIAL AND ON THE LED DISPLAY.

____ G. CHANNEL SELECTOR: SETS THE CHANNEL FREQUENCY FOR TRANSMISSION.

____ 2. CHANNEL SELECTOR: CHANNEL SELECTOR SETS THE FREQUENCY FOR TRANSMISSION AND RECEPTION.

____ A. CHANNEL SELECTOR: CHANNEL SELECTOR SETS THE FREQUENCY FOR TRANSMISSION AND RECEPTION.

____ B. PLUG: ATTACHMENT POINT FOR SETCOMM.

____ C. ANT: DO NOT ATTEMPT TO TRANSMIT WITH A DAMAGED OR MISSING ANTENNA.

____ D. ON/VOL: THIS DIAL SERVES AN ON/OFF SWITCH AND VOLUME CONTROL.

____ E. CG: ON/OFF SWITCH FOR THE CHANNEL CONTROL.

____ F. SQUELCH:

_____ 3. DEMONSTRATE THE PROPER PROCEDURES FOR CHANGING BATTERIES.
(RELEASE THE THUMB LOCK AT SIDE OF BATTERY AND TWIST BATTERY FROM THE RADIO).

_____ 4. IDENTIFY THE PRIMARY USE OF EACH RADIO CHANNEL PROGRAMED INTO THESE RADIOS.

_____ F-1 DISPATCH
_____ F-2 DATA OR BACKUP TACTICAL
_____ F-3 MEDICAL
_____ F-4 TACTICAL - UNIT TO UNIT
_____ F-5 STATE WHITE 1 - MUTUAL AID (CALIF STATE CHAN.)
_____ F-6 RED - COUNTY COMMAND ONLY
_____ F-7 LOCAL TACTICAL - STATE WHITE 3 - UNIT TO UNIT
_____ F-8 RESPONSE AND LOCAL COMMAND
_____ F-9 SOUTH TACTICAL
_____ F-10 NORTH TACTICAL
_____ F-11 EAST TACTICAL
_____ F-12 STATE WHITE 2
_____ F-13
TO WILL BE ASSIGNED AS THE NEED ARISES
_____ F-16

_____ 5. DEMONSTRATE THE ABILITY TO ATTACH A SETCOMM TO EACH RADIO.

_____ 6. REVIEW THE MAINTENANCE PROCEDURES, MAINTENANCE LOG-BOOK, AND INVENTORY LIST FOR THESE RADIOS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CHLORINE KIT "A"

_____ 1. DEMONSTRATES METHODS USED TO DETECT CHLORINE LEAKS.

_____ 2. DEMONSTRATES METHODS USED TO REMEDY LEAKS OCCURRING THROUGH THE FOLLOWING AREAS:

- _____ VALVE PACKING GLAND
- _____ VALVE SEAT
- _____ VALVE INLET THREADS
- _____ BROKEN-OFF VALVE
- _____ BLOWN OUT VALVE
- _____ BLOWN OUT VALVE STEM ASSEMBLY
- _____ FUSIBLE PLUG

_____ 3. APPLIES "HOOD FOR VALVE" DEVICE.

_____ 4. APPLIES CLAMP FOR FUSIBLE PLUG.

_____ 5. APPLIES PATCH FOR SIDEWALL LEAKS.

_____ 6. DESCRIBES BASIC KIT MAINTENANCE.

_____ 7. DESCRIBES KIT LIMITATIONS.

TRAINING SUPERVISOR'S
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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CHLORINE KIT "B"

_____ 1. DEMONSTRATES METHODS USED TO DETECT CHLORINE LEAKS.

_____ 2. DEMONSTRATES METHODS USED TO REMEDY LEAKS OCCURRING THROUGH THE FOLLOWING AREAS:

- _____ VALVE PACKING GLAND
- _____ VALVE SEAT
- _____ VALVE INLET THREADS
- _____ BROKEN-OFF VALVE
- _____ BLOWN OUT VALVE
- _____ BLOWN OUT VALVE STEM ASSEMBLY
- _____ FUSIBLE PLUG

_____ 3. APPLIES "HOOD FOR VALVE" ASSEMBLY - DEVICE.

_____ 4. APPLIES "HOOD FOR FUSIBLE PLUG" ASSEMBLY - DEVICE.

_____ 5. APPLIES PATCH FOR SIDEWALL LEAKS - DEVICE.

_____ 6. DESCRIBES BASIC KIT MAINTENANCE.

_____ 7. DESCRIBES KIT LIMITATIONS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

CHLORINE KIT "C"

____ 1. DEMONSTRATES METHODS USED TO DETECT CHLORINE LEAKS.

____ 2. DEMONSTRATES METHODS USED TO REMEDY LEAKS OCCURRING THROUGH THE FOLLOWING AREAS:

- ____ ANGLE VALVE PACKING GLAND
- ____ ANGLE VALVE SEAT
- ____ ANGLE VALVE GASKET
- ____ SAFETY RELIEF VALVE
- ____ SAFETY RELIEF VALVE GASKET
- ____ MANWAY COVER GASKET

____ 3. APPLIES "HOOD FOR ANGLE VALVE" ASSEMBLY - DEVICE.

____ 4. APPLIES "HOOD FOR SAFETY VALVE" ASSEMBLY - DEVICE.

____ 5. APPLIES PATCH FOR SIDEWALL LEAK AT MANWAY COVER.

____ 6. DESCRIBES BASIC KIT MAINTENANCE.

____ 7. DESCRIBES KIT LIMITATIONS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

PLUG-AND-DIKE

_____ 1. DESCRIBE THE PURPOSE OF THE PATCHING MATERIAL.

_____ 2. DESCRIBE INDICATIONS FOR THE USE OF THE MATERIAL.

_____ 3. RELATES SAFETY FACTORS TO APPLICATION OF MATERIAL;

_____ USE PROPER PERSONAL PROTECTIVE CLOTHING
_____ APPROACH FROM UPHILL/UPWIND
_____ LIMITS PERSONAL CONTACT WITH PRODUCT

_____ 4. DESCRIBES ADJUNCT EQUIPMENT;

_____ WATER
_____ BUCKET
_____ KIDDY POOL
_____ TAPE
_____ WEDGES
_____ EPOXY

_____ 5. DESCRIBES LIMITATIONS OF USE.

_____ 6. DESCRIBES MAINTENANCE OF PATCH.

TRAINING SUPERVISOR'S
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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

VETTER SYSTEM SEALING PRODUCTS

_____ 1. COMPLETED THE THIRD QUARTER LESSON PLAN NUMBER ONE (CONTAINMENT & MITIGATION) AND PASS THE QUIZ FOR THAT LESSON.

_____ 2. NAME COMPONENTS OF UNIT AND DESCRIBE PURPOSE OF EACH.

_____ 3. STATE THE DIFFERENT USES OF THE UNIT.

_____ 4. STATE ALL APPROPRIATED SAFETY PRECAUTIONS.

_____ 5. GIVE ALL THE MAXIMUM INPUT AIR PRESSURES AND MAXIMUM OPERATING PRESSURES.

_____ 6. STATE THREE REASONS FOR THE IN-LINE RELIEVE VALVE.

_____ 7. DEMONSTRATE ABILITY TO SET-UP/OPERATE EACH COMPONENT.

_____ 8. PROPERLY OUTLINE THE CARE AND MAINTENANCE OF THE SYSTEMS AND IT'S COMPONENTS.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

ENCAPSULATING SUITS

_____ 1. COMPLETED THE QUARTERLY LESSON PLAN FOR CHEMICAL PROTECTIVE CLOTHING.

_____ 2. COMPLETED THE QUARTERLY LESSON PLAN FOR SELECTION AND USE OF CHEMICAL PROTECTIVE CLOTHING.

_____ 3. DEMONSTRATES PROPER SUIT LAYOUT FOR DONNING AND USE.

_____ 4. DESCRIBES DIFFERING SUIT MATERIALS/TYPES:

- _____ TRELLBORG - BUTYL
- _____ TRELLBORG - VITON/BUTYL
- _____ LIFEGUARD - TEFLON/NOMEX
- _____ LIFEGUARD - RESPONDER
- _____ ADDITIONAL SUITS:
  - ___ DISPOSABLE OVERSUIT - SARANEX/TYVEK
  - ___ COLD PROTECTIVE OVERSUIT
  - ___ PROXIMITY SUIT

_____ 5. DEMONSTRATES ABILITY TO SELECT PROPER SUIT BY USING AVAILABLE COMPATIBILITY CHARTS.

_____ 6. DESCRIBES LIMITATIONS TO SUIT MATERIALS:

- _____ NO SUIT IS RESISTANT TO ALL CHEMICALS.
- _____ DECREASED MOBILITY AND DEXTERITY.
- _____ DECREASED FIELD OF VISION.
- _____ DECREASED ABILITY TO COMMUNICATE.
- _____ POSSIBLE HEAT STRESS COMPLICATIONS.

_____ 7. DESCRIBES SUIT STORAGE AND PLACEMENT ON VEHICLE.

_____ 8. DESCRIBES PROPER CARE, MAINTENANCE AND TESTING PROCEDURES OF SUITS.

TRAINING SUPERVISOR'S
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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

MICROCLIMATE COOLING SYSTEM --- COOLHEAD

_____ 1. DESCRIBE THE PURPOSE OF THE COOLHEAD.

_____ 2. DESCRIBE THE INDICATIONS FOR USE OF THE COOLHEAD.

_____ 3. DESCRIBE THE COMPONENTS OF THE COOLHEAD UNIT.

_____ 4. DON THE COOLHEAD AND PLACE THE UNIT IN SERVICE.

_____ 5. DESCRIBE THE FIRST-DAY-BACK CHECKS FOR THE COOLHEAD.

_____ 6. DESCRIBE THE ROUTINE MAINTENANCE PROCEDURES.

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GUIDE SHEET

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THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

PNEUMATIC AIR DRILL

_____ 1. DEMONSTRATE KNOWLEDGE OF KEY OPERATING PARTS AND FEATURES OF THE DRILL.

_____ 2. DESCRIBE WHERE THE DRILL AND ITS ASSOCIATED EQUIPMENT IS KEPT ON HM-1.

_____ 3. PLACE THE AIR DRILL INTO OPERATION.

_____ 4. SPECIFY THE WORKING AIR PRESSURE IN PSI.

_____ 5. SPECIFY THE SAFETY EQUIPMENT REQUIRED WHILE USING THE AIR DRILL.

_____ 6. DESCRIBE THE LUBRICATION SCHEDULE FOR THE AIR DRILL.

TRAINING SUPERVISOR'S
SIGNATURE _____ DATE _____

SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

GUIDE SHEET

NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

AWNING HM-1

_____ 1. REVIEW THE OPERATING INSTRUCTIONS.

_____ 2. DEMONSTRATE THE ABILITY TO PLACE THE AWNING INTO OPERATION:
_____ VEHICLE MOUNT
_____ PATIO POSITION

_____ 3. DEMONSTRATE THE AWNING POSITION TO PREVENT WATER FROM POOLING.

_____ 4. DEMONSTRATE THE ABILITY TO SECURE THE AWNING FOR TRAVEL.

_____ 5. DESCRIBE THE BASIC AWNING MAINTENANCE PROCEDURES.

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PERSONNEL DECONTAMINATION STATION

_____ 1. COMPLETE THE DECONTAMINATION LESSON PLAN.

_____ 2. IDENTIFY APPROPRIATE WORK ZONES FOR DECON SET-UP.

_____ 3. IDENTIFY THE REQUIRED EQUIPMENT AND PURPOSE OF EACH ITEM.

_____ 4. DESCRIBE THE TYPE OF INCIDENT APPROPRIATE FOR THIS TYPE OF DECONTAMINATION PROCEDURE.

_____ 5. IDENTIFY DECON TEAM MEMBERS BY TITLE AND EXPLAIN FUNCTIONS OF EACH POSITION.

_____ 6. DESCRIBE PURPOSE OF HAVING THE DECON POOLS TOUCH.

_____ 7. DESCRIBE OPTIONS FOR SELECTION OF PROPER DECON SOLUTION.

_____ 8. IDENTIFY OPTIONS FOR DISPOSAL OF CONTAMINATED DECON ITEMS.

_____ 9. DRAW COMPONENTS OF DECON SET-UP ACCORDING TO LESSON PLAN DIAGRAM.

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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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PORTABLE DECONTAMINATION SHOWER 2302

_____ 1. LOCATE AND SET UP SHOWER ON A LEVEL SURFACE (KEEP IN MIND THAT THE RINSE WATER MAY HAVE TO BE CONTAINED).

_____ 2. FOLLOW SET UP PROCEDURES:
- _____ PULL LOCK PIN AND RELEASE.
- _____ RELEASE BASE PLATES.
- _____ LAG BASE PLATES TO 4 X 4'S.
- _____ LIFT UPPER TUBE ASSEMBLY AND LOCK COUPLING LATCHES INTO POSITION.
- _____ ONCE LOCK PINS ARE ENGAGED, PUSH TUBE INTO VERTICAL POSITION.

_____ 3. INSPECT INLET TUBE FOR FOREIGN MATERIAL AND CONNECT 1" NST WATER SUPPLY (REDLINE).

_____ 4. TURN ON WATER SUPPLY USING THE 1" BALL VALVE.

_____ 5. HANG SHOWER CURTAIN OR SALVAGE COVER IF NEEDED.

NOTE: ACTUAL TIME OF DECONTAMINATION WILL VARY DEPENDING UPON MATERIALS INVOLVED AND EXPOSURE PERIOD.

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ONAN GENERATOR

SPECIFICATIONS:

_____ 6 KILOWATT
_____ 120/240 VOLT
_____ 25 AMPERE
DIESEL FUEL SUPPLIED THROUGH APPARATUS FUEL TANK

SERVICE:

_____ PRIMARY AND SECONDARY FILTERS (FUEL)
_____ OIL (CRANKCASE) FILTER
SERVICE TO BE AT LEAST ONCE EVERY 100 HOURS

START-UP:

_____ ONE MINUTE PRE-HEAT
_____ HOLD START SWITCH UP TO START

WHEN IN OPERATION THE GENERATOR POWERS THE FOLLOWING 110 VOLT APPLIANCES THAT ARE WIRED DIRECTLY TO THE SYSTEM:

_____ ROOF AIR CONDITION
_____ 1500 WATT QUARTZ LIGHTS (2)
_____ 110 VOLT OUTLETS ON EITHER SIDE
_____ LAB BENCH VENTILATION FAN
_____ POWER STRIP FOR ALLIED EQUIPMENT
_____ BATTERY CHARGERS
_____ REFRIGERATOR (110 VOLT ONLY)

WHEN THE GENERATOR IS NOT IN OPERATION, THE APPARATUS CAN BE SUPPLIED WITH 110 VOLT POWER VIA AN UMBILICAL CORD.

ALL OTHER EQUIPMENT OPERATES OFF OF THE APPARATUS 12 VOLT SYSTEM.

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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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STREET DRAIN MAPS

_____ 1. FAMILIARIZE SELF WITH STORM DRAIN MAP BOOK.

_____ 2. STATE WHEN THIS RESOURCE BOOK WOULD BE USED.

_____ 3. SELECT ANY STREET IN SAN DIEGO CITY, LOCATE THAT STREET IN MAP BOOK INDEX, AND LOCATE CORRECT MAP PAGE IN BOOK.

_____ 4. DESCRIBE METHOD FOR LOCATING ADJOINING MAP PAGES TO THE CURRENT MAP PAGE WHICH IS BEING USED (USE KEY PROVIDED IN LOWER RIGHT CORNER OF EACH PAGE).

_____ 5. EXPLAIN MEANING OF SYMBOLS LOCATED ON MAP.
(> >) ARROWHEADS INDICATE DIRECTION OF WATER FLOW
(--0--) INDICATE STORM DRAIN COVERS
(-- --) INDICATE STORM DRAIN OPENINGS

_____ 6. GIVEN STARTING POINT FOR SPILL, DEMONSTRATE ABILITY TO FOLLOW PATH OF TRAVEL. ONTO TWO (2) ADJOINING MAP PAGES.

_____ 7. DESCRIBE THE LIMITATIONS OF THE STORM DRAIN MAP BOOK.
A. NEW STREETS NOT SHOWN
B. AREAS OUT OF CITY NOT SHOWN
C. SMALL PRINT, DIFFICULT TO READ

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SAN DIEGO FIRE DEPARTMENT HAZARDOUS MATERIALS TEAM

EQUIPMENT/MANIPULATIVE PROFICIENCY TRACKER

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NAME OF TECHNICIAN _____ DATE _____

THE TECHNICIAN WILL DEMONSTRATE PROFICIENCY IN THE KNOWLEDGE AND OPERATION OF THE FOLLOWING PIECE OF EQUIPMENT OR MANIPULATIVE SKILL.

SAMPLING TECHNIQUES

_____ 1. DESCRIBE THE NEED FOR SAMPLING PRODUCT.

_____ 2. DESCRIBE SECONDARY CONTAINMENT METHODS AND CONTROL MEASURES THAT MAY BE APPROPRIATE:
- _____ COMPATIBLE SECONDARY CONTAINMENT
- _____ INERTING ATMOSPHERE
- _____ COOLING CONTAINERS

_____ 3. NAME INFORMATION SOURCES AVAILABLE TO ASSIST IN PRODUCT IDENTIFICATION:
- _____ ON SITE PERSONNEL
- _____ FIRST RESPONDERS
- _____ OFF SITE PERSONNEL

_____ 4. DESCRIBE AVAILABLE DEVICES TO DETECT THE PRESENCE OF CONTAMINANTS ON THE OUTSIDE OF A CONTAINER:
- _____ CGI
- _____ PID
- _____ SWIPE TESTS
  - _____ PH TEST
  - _____ OXIDIZER TEST
  - _____ PEROXIDE TEST
- _____ RADIOLOGICAL METER
- _____ HALON DETECTOR
- _____ COLORMETRIC TUBES

_____ 5. DESCRIBE METHODS AVAILABLE TO DETERMINE LIQUID LEVEL AND/OR THE PRESENCE OF HEAT:
- _____ WAHL HEAT GUN
- _____ EXERGEN MICRO HEAT SCANNER

_____ 6. DEMONSTRATE THE ABILITY TO OPEN CLOSED CONTAINERS AND RETRIEVE PRODUCT FROM:
- _____ BUNG HOLES
- _____ BUNGLESS DRUMS
- _____ PLASTIC CONTAINERS
- _____ GLASSWARE

_____ 7. DEMONSTRATE THE ABILITY TO RETRIEVE SAMPLES FROM BOTH STATIC AND MOVING SOURCES.

_____ 8. DEMONSTRATE THE ABILITY TO ANALYZE THE SAMPLE FOLLOWING RETRIEVAL.
- _____ MAINTAIN CHAIN OF CUSTODY RECORDS.

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BUSHNELL 50mm SPOTTING SCOPE

_____ 1. DESCRIBE THE PURPOSE OF THE SPOTTING SCOPE.

_____ 2. LOCATE THE ZOOM ADJUSTMENT AND SPECIFY THE RANGE.

_____ 3. LOCATE THE FINE FOCUS ADJUSTMENT.

_____ 4. DEMONSTRATE THE ABILITY TO SET UP AND ATTACH THE SCOPE TO THE ACCOMPANYING TRIPOD.

_____ 5. DEMONSTRATE THE ABILITY TO FOCUS THE TELESCOPE ON A DISTANT OBJECT.

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GROUNDING AND BONDING

_____ 1. COMPLETE QUARTERLY LESSON PLAN ON STATIC ELECTRICITY.

_____ 2. STATES WHEN AND WHERE TO USE GROUNDING AND BONDING.

_____ 3. EXPLAINS THE THEORY OF STATIC ELECTRICITY BUILD-UP AND DISCHARGE.
A. FROM AN AREA OF GREATER POTENTIAL TO
B. AN AREA OF LESSER POTENTIAL.

_____ 4. DESCRIBE PURPOSE OF GROUNDING AND BONDING.

_____ 5. EXPLAINS PRINCIPLES OF GROUNDING AND BONDING.

_____ 6. DEMONSTRATES WHAT TOOLS AND MATERIALS ARE REQUIRED AND WHAT IS THEIR LOCATION OF THE HAZ MAT FIRE TRUCK
A. GROUNDING RODS, GROUNDING WIRES, BURLAP BAGS,
B. SLEDGEHAMMERS, WATER, ETC.

_____ 7. GIVEN A SCENARIO: DEMONSTRATES THE ABILITY TO IMPLEMENT AN APPROPRIATE GROUNDING AND BONDING SYSTEM.

_____ 8. DESCRIBE THE PROPER CARE AND MAINTENANCE OF THE EQUIPMENT.

_____ 9. PROPERLY RETURNS EQUIPMENT TO THE CORRECT COMPARTMENTS ON THE HAZ MAT FIRE TRUCK.

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AIR MANIFOLD

_____ 1. CONNECT SINGLE AIR FROM LARGE 330 CUBIC FOOT AIR CYLINDER TO MANIFOLD INTAKE.

_____ 2. SETS CYLINDER REGULATOR TO AT LEAST 125 PSI (150 MAXIMUM PSI AVAILABLE).

_____ 3. CONNECTS AIR LINES FROM MANIFOLD TO ENCAPSULATING SUIT.

_____ 4. FOLLOWS COLOR CODING:
A. BREATHING AIR - YELLOW TO YELLOW, 125 PSI
B. COOLING AIR - RED TO RED, REGULATED TO 40 PSI

_____ 5. CONNECTS VETTER SYSTEM.
A. CONNECT TO REGULATED SIDE
B. RED SIDE, PRESSURE RANGE 40 TO 45 PSI

_____ 6. CONNECTS AIR DRILL
A. RESIDUAL PRESSURE 90 PSI
B. STATIC PRESSURE 150 PSI

_____ 7. AIR DRILL MAY BE CONNECTED DIRECTLY TO LARGE CYLINDER ELIMINATING MANIFOLD CONNECTIONS.

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PORTABLE EXTINGUISHERS

_____ 1. DESCRIBE THE COMPLIMENT OF PORTABLE EXTINGUISHERS AVAILABLE FOR USE ON HAZ MAT.
_____ CO2 _____ DRY CHEMICAL
_____ HALON _____ METAL X

_____ 2. DEMONSTRATE THE ABILITY TO OPERATE ALL PORTABLE FIRE EXTINGUISHERS ON HAZ MAT.

_____ 3. DESCRIBE THE ROUTINE MAINTENANCE REQUIRED FOR THE VARIOUS EXTINGUISHERS.

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COLLAPSIBLE LADDER

_____ 1. DISCUSS VARIOUS USES OF THIS EQUIPMENT -
   (a) 2 LADDERS AS SCAFFOLDS FOR BACKBOARD IN DECONTAMINATION OF NON-AMBULATORY PATIENTS.
   (b) A STABLE BASE FROM WHICH TO OPERATE ON TOP OF A RAIL CAR OR HIGHWAY TANKER.
   (c) A SCAFFOLD.
   (d) A STANDOFF LADDER (top section @ right angle)

_____ 2. DEPLOY AS A SCAFFOLD.

_____ 3. PROPERLY SET ALL LOCKS.

_____ 4. DISCUSS LOAD LIMITATIONS (listed on ladder).

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WEATHER STATION

_____ 1. LIST INFORMATION THAT CAN BE DERIVED FROM THE WEATHER STATION:

_____ OUTSIDE AIR TEMP.	_____ BAROMETRIC PRESSURE
_____ INSIDE AIR TEMP.	_____ TIME
_____ WIND SPEED.	_____ DATE
_____ WIND DIRECTION.	_____ ALTIMETER
_____ WIND CHILL.	

_____ 2. WHAT PROBLEM ARISES FROM DISCONNECTING ALL POWER FROM THE WEATHER STATION?

POWER IS SUPPLIED FROM TWO SOURCES:
INTERNAL BATTERY POWER
EXTERNAL RIG POWER

IF THE POWER FROM BOTH SOURCES ARE DISCONNECTED THE PROGRAMED MEMORY IS LOST AND MUST BE REPROGRAMMED BEFORE THE UNIT WILL FUNCTION.

_____ 3. LOCATE ALL EQUIPMENT ASSOCIATED WITH THE WEATHER STATION.

_____ 4. SET UP THE WEATHER VANE AND CALIBRATE THE INSTRUMENT FOR WIND DIRECTION.

_____ 5. ASCERTAIN READINGS FROM THE INSTRUMENT.

TRAINING SUPERVISOR'S
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HAZARD MATERIAL TEAM

EQUIPMENT/MANIPULATIVE TRAINING TRACKER INDEX

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Equipment/Manipulative Proficiency Tracker

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Appendix K

The NFPA document s are located at:
http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?

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National Fire Protection Association
The authority on fire, electrical, and building safety

Appendix L

HAZARDOUS MATERIALS MEDICAL MANAGEMENT PROTOCOLS (2ND EDITION)

HAZARDOUS MATERIALS

MEDICAL MANAGEMENT

PROTOCOLS,

SECOND EDITION

Prepared By

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HAZARDOUS MATERIALS
MEDICAL MANAGEMENT PROTOCOLS,
SECOND EDITION

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1978	Propane	P.4.1	72
1982	Tetrafluoromethane	H.1.1	12
1983	Chlorotrifluoroethane	H.1.1	12
1987	Alcohols	P.4.1	26
1993	Fuel oil	P.4.1	57
1999	Road asphalt/Tar, liquid	P.4.1	27
2018	chloroaniline, solid	N.1.1	53
2019	Chloroaniline, liquid	N.1.1	55
2020	Pentachlorophenol	P.1.1	53
2031	Nitric acid (>40%)	A.1.1	44
2032	Nitric acid, fuming	A.1.1	44
2038	Dinitrotoluene, solid	N.1.1	56
2044	Dimethyl propane	P.4.1	22
2046	Methyl propyl benzene	P.4.1	27
2049	Diethylbenzene	P.4.1	29
2050	Diisobutylene	P.4.1	26
2055	Styrene, monomer	P.4.1	27
2188	Arsine	A.3.1	18
2191	Fumigants	M.1.1	15, 55
2199	Phosphine	P.5.1	18
2208	Calcium hypochlorite, dry (C12 10% to 39%)	C.2.1	35
2209	Formalin	F.1.1	29
2212	Asbestos, blue	A.4.1	31
2237	Chloronitroaniline	N.1.1	53
2241	Cycloheptane	P.4.1	27
2244	Cyclopentanol	P.4.1	26
2246	Cyclopentene	P.4.1	27
2253	Dimethylaniline	N.1.1	57
2256	Cyclohexene	P.4.1	29
2261	Xylenol	P;4.1	55
2272	Ethylaniline	N.1.1	55
2274	Ethylbenzylaniline	N.1.1	53
2275	Ethylbutanol	P.4.1	26
2294	Methyl aniline	N.1.1	57
2296	Methylcyclohexane	P.4.1	27
2297	Methylcyclohexanone	P.4.1	26
2302	Methyl hexanone/ Methyl isoamyl ketone	P.4.1	26
2315	Polychlorinated biphenyls/PCB's	P.6.1	31
2316	Sodium cuprocyanide, solid	C.3.1	53
2317	Sodium cuprocyanide solution	C.3.1	53
2325	Trimethylbenzene	P.4.1	26
2337	Phenyl mercaptan	H.3.1	57
2347	Butyl mercaptan	H.3.1	27
2362	Dichloroethane	H.1.1	27
2363	Ethyl mercaptan	H.3.1	27

INDEX OF HAZARDOUS MATERIALS AND APPROPRIATE PROTOCOLS

U.N. NUMBER	CHEMICAL NAME	PAGE NUMBER	DOT GUIDE
2384	Dipropyl ether	P.4.1	26
2398	Methyl butyl ether	P.4.1	26
2402	Propyl mercaptan	H.3.1	27
2404	Proprionitrile	C.3.1	28
2432	Diethyl aniline	N.1.1	57
2457	Dimethylbutane	P.4.1	27
2465	Dichloroisocyanurate/ Dichlorotriazinetrione	C.2.1	42
2468	Trichloroisocyanurate/ Trichlorotriazinetrione	C.2.1	42
2517	Chlorodifluoroethane	H.1.1	22
2553	Coal tar naphtha	P.4.1	27
2553	Painters' Naphtha	P.4.1	27
2588	Propoxur	P.2.1	28
2590	Asbestos, whit~	A.4.1	31
2601	Cyclobutane	P.4.1	22
2608	Nitropropane	N.1.1	26
2612	Methyl propyl ether	P.4.1	26
2617	Methylcyclohexanol	P.4.1	26
2618	Methyl styrene/Vinyl toluene	H.1.1	27
2627	Nitrites	N.1.1	35
2670	Cyanuric chloride	C.3.1	60
2672	Ammonia, solution/Ammonium hydroxide	A.2.1	60
2710	Dipropyl ketone	P.4.1	26
2757	Lamnate	P.2.1	55
2757	Methomyl	P.2.1	55
2758	Carbamate pesticide, flammable liquid	P.2.1	55
2783	Organophosphate pesticides, various	P.3.1	55
2784	Organophosphates, flammable	P.3.1	28
2789	Acetic acid, glacial (>80%)	A.1.1	29
2790	Acetic acid (10% to 80%)	A.1.1	60
2796	Electrolyte, acid	A.1.1	39
2831	1,1, 1-Trichloroethane/ Methylchloroform	H.1.1	74
2880	Calcium hypochlorite, hydrated	C.2.1	45
2991	Carbamate pesticide, flammable liquid, n.o.s.	P.2.1	28
2992	Carbamate pesticide, n.o.s.	P.2.1	55
3070	Dichlorodifluoromethane &Ethylene oxide	E.1.1	18
3071	Mercaptan mixture, n.o.s.	H.3.1	57
3071	Mercaptoethanol	H.3.1	28, 57
9037	Hexachloroethane	H.1.1	53
9090	Ammonium sulfite	H.3.1	.31
9126	Fumaric acid	A.1.1	31

II. INTRODUCTION TO PROTOCOLS

Health care providers who care for injured persons exposed to hazardous materials must know how to evaluate and manage a contaminated victim's medical problems while protecting themselves and others from potential hazardous exposure (secondary contamination). The following treatment protocols provide succinct, step-by-step information on how to manage medical problems arising from the most common kinds of hazardous materials ("hazmat") episodes.

These protocols are designed for use by "EMS hazmat entry team members," paramedics or other rescue health workers in the field, and hospital emergency department physicians and nurses. The protocols are intended as *guidelines.* They may require modification depending on the resources of a particular hospital or the needs of a particular patient. It is essential for the safety of health care personnel and patients that hospitals and emergency medical services agencies have a written plan for management of the contaminated victim, and that their personnel are trained to follow it. In all incidents, health care providers should immediately contact their base hospital, if prehospital care provider, or Regional Poison Control Center for advice on managing victims of hazardous materials exposure.

Controversies abound in the evolving field of environmental toxicology. For this reason, the protocols are sometimes vague or ambiguous. For example, no consensus exists on what specific protective gear, if any, is appropriate for emergency departments and prehospital medical care providers because most authorities agree that it is unacceptable to provide sophisticated protective gear to persons who have not been previously properly fitted and trained in its use.

It is imperative that proper decontamination has been initiated by the hazmat team or other trained responders in the hot zone/decontamination area. Rescuers who are trained to use self contained breathing apparatus, to select the appropriate chemical protective suits, and know how to function in them, are the only ones who should assist with decontamination or enter the hot zone.

Federal OSHA has established new hazardous materials training requirements for responders who are called to a spill. The requirements are identified in OSHA 29 CFR 1910.120. California OSHA is developing similar regulations (Section 5192, Title 8, California Code of Regulations). These regulations will be no less stringent than that currently required by federal OSHA. California OSHA enforces these standards, not the Authority.

The Federal 29 CFR 1910 final rule applies to EMS. If an employer expects to respond to a hazardous materials incident, then he must train his employees about the hazards involved and the role that they will be expected to play. The rule states that: "Training shall be based on the duties and function to be performed by each responder of an emergency response organization" (p.9329).

The NIOSH EPA hazardous waste site operations document is helpful in defining the EMT's role. It categorizes "medical support" as involving "off-site personnel" (p.3-3). Ambulance personnel "provide emergency treatment procedures appropriate to the hazards on site." Decontamination is carried out by others under the direction of the Decontamination Station Officer(s) (p. 3-4). In California, the Authority has taken the position that the person doing the decontamination would probably be a firefighter (hopefully trained as an EMT-I) who is responsible for decontaminating personnel as well as victims. Given most EMS personnel's daily medical duties, training, and responsibilities at a hazmat spill site ([,articularly if they are not part of the fire service) they should be trained at least at the "First Responder Awareness Level."

EMT-IIs and paramedics should be trained at the "First Responder Operations Level" if they are expected to select and don protective equipment, conduct rescues, decontaminate victims or response personnel. In any case, these two EMS classifications should take a course on the medical management of hazmat victims that is based on these protocols or their equivalent. Fire service personnel, who may also be EMTs, will be trained at a higher level because of their fire service duties and functions. All of this must be consistent with the hazmat role that the local EMS agency has defined for EMS personnel. Again, it is the employer's responsibility to see that their personnel are properly trained to meet these requirements.

"First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release" (p. 9329). Given their typical daily responsibilities and training, EMTs clearly are not responsible for making a rescue wearing protective gear, for controlling and containing the release, stopping its spread, or for decontamination of protective equipment. However, they can provide medical care to a fully decontaminated victim. The federal rule does not specify how many hours of training are necessary for this level. We have evaluated the rule and recommend no less than four hours of training as being sufficient to meet the OSHA requirements for this category of responder. Additional medical training to manage hazardous materials victims would probably be necessary.

"First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property or the environment from the effect of the release. They are trained to respond in a defensive fashion without actually trying to stop the release from a safe distance, keep it from spreading, and prevent exposures." ~. 9329). Eight hours of training is required for this level by Federal OSHA. Again, additional medical training to decontaminate and mange victims would probably be necessary. A four to six hour medical management course would fill this need.

The Authority's interpretation of Federal 29 CFR 1910.120 and of the draft California OSHA regulations is that EMTs should not be required to wear special protective gear, SCBA or respirators unless they have been trained to use them and their responsibilities at the scene require it. In the vast majority of cases, they should be trained to recognize a hazardous materials incident and be able to initiate a response. Decontaminated victims should be brought to them for medical care so that untrained and unprotected EMTs are not put at risk.

In all cases, employers should consider SARA III and all OSHA requirements for training their employees(Federal OSHA, FR 54: 9294-9336; Cal OSHA, General Industrial Safety Orders, Section 5192, draft 8, December 13, 1990; and, Code of California Regulations, Sections 3203, 3220, 5141, 5144, *5155,* 5192 and 5194). According to California OSHA staff, many of these requirements apply to hospital emergency departments, too. Your local California OSHA office should be contacted if you have any questions. Again, the Authority does not enforce state or federal OSHA regulations.

A hazardous materials Basic First Responder Course approved by California Specialized Training Institute (805-549-3535) and EMS hazardous material medical management and planning courses offered by the University of California, Davis' Hazardous Substances Program (1-800-752-0881), provide a good introduction to how a hazmat response is organized, what to do if a prehospital health care provider is first on the scene, management of medical care, and planning a response.

These protocols do *not* address accidents involving *radioactive materials.* Radioactive materials incidents require unique strategies, monitoring equipment and specialized consultants. Well-established protocols already exist for their management (call Oak Ridge National Laboratories - 615-576-3131 - for information).

III. THE CONCEPT OF SECONDARY CONTAMINATION

An essential question to ask is, "What is the risk of secondary contamination (to rescuing personnel, transport vehicles, hospital emergency departments) from this chemical?" It is traditionally axiomatic in hazardous materials emergency management that chemicals should be considered both highly toxic and highly contaminating to personnel, vehicles, and the environment. However, a great many chemicals are very highly toxic *only* in the high concentrations found in the immediate exposure area (hot zone) but pose *hale or no risk* to persons outside the hot zone. Small amounts of some chemicals may produce relatively little acute toxicity, but because they are suspected of causing cancer or other chronic disease they are considered to create a risk of secondary contamination.

Tables 1 and 2 list selected examples of hazardous substances which carry a high vs. a low risk for *secondary contamination.* The lists are meant to be illustrative, not exhaustive. Note that highly toxic chemicals. may be found in *either* list. The Regional Poison Control Center or base hospital can assist you in determining the potential for secondary contamination of other hazardous materials.

SUBSTANCES WITH SERIOUS POTENTIAL FOR SECONDARY CONTAMINATION:

Unless the victim has been properly decontaminated, substances like those listed in Table 1 may persist in significant amounts on the victim's clothing, skin, hair, or personal belongings, and may jeopardize health care workers or other attendants. Recommended protective gear should be worn (Table 5 or Table 7). Reducing the potential for chemical exposure from any form of mouth-to-mouth resuscitation, including use of pocket one-way valve mouth-to-mouth resuscitation devices should be carefully considered when the victim has been exposed to one of the listed gases. If resuscitation efforts are necessary, a bag valve mask with reservoir device or manually triggered oxygen powered breathing device, should be applied to the patient. Contact with even lightly contaminated skin or clothing should be minimized prior to decontamination. *Proper decontamination by adequately protected personnel must be carried out before the victim is treated by pre hospital or emergency department personnel.*

Table 1: Substances with a High Risk for Secondary Contamination

Examples:
! Acids, alkali & corrosives (if concentrated)
! Asbestos (large amounts, crumbling)
! Cyanide salts & related compounds (e.g., nitriles) and hydrogen cyanide
! Hydrofluoric acid solutions
! Nitrogen-containing and other oxidizers which may produce methemoglobinemia (aniline, aryl amines, aromatic nitro-compounds, chlorates, etc.)
! Pesticides
! PCBs (polychlorinated biphenyls)
! Phenol and phenolic compounds
! Many other oily or adherent toxic dusts and liquids

SUBSTANCES WITH LITTLE RISK FOR SECONDARY CONTAMINATION:

Many of the substances listed in Table 2 are highly toxic. However, even if they persist in the victim's clothing, skin, hair, or personal belongings after removal from hot zone, they are not likely to jeopardize health care workers or rescuers and are not likely to secondarily contaminate vehicles or the emergency department. *On-scene decontamination, if indicated, is desirable especially clothing removal and victim wash, but not essential.*

Table 2: Substances with a Low Risk for Secondary Contamination

Examples:
! Most gases and vapors unless they condense in significant amounts on the clothing, skin or hair
! Weak acids, weak alkali and weak corrosives in low concentrations (excluding hydrofluoric acid)
! Weak acid or weak alkali vapors (unless clothing soaked and excluding hydrofluoric acid vapor)
! Arsine gas
! Carbon monoxide gas
! Gasoline, kerosene & related hydrocarbons
! Phosphine gas
! Smoke/combustion products (excluding chemical fires)
! Small quantities of common hydrocarbon solvents (e.g., toluene, xylene, paint thinner, ketones, chlorinated degreasers)

IV. BASIC DECONTAMINATION PROTOCOL

In a properly functioning hazardous materials response, victims will be decontaminated in the decontamination corridor (Table 1) by properly suited hazmat team members. This will include removal of wet or exposed clothing, flushing affected skin and hair with water, and soap or shampoo wash if needed (i.e., for oily or adherent substances). The following basic decontamination protocol should be followed for all contaminated victims.

Table 3. Basic Decontamination Protocol

1.	Determine the need for decontamination by consulting the appropriate protocol and calling your Regional Poison Control Center.
2.	For advice on selection of specific protective clothing, you may also contact CHEMTREC at (800) 424-9300 or the AAR Bureau of Explosives at (202) 835-9500. If the proper protective equipment is not available, or prehospital or hospital staff have not been trained to use it, call for assistance from the local usually fire department, hazmat team.
3.	Evaluate ABCs, stabilize spine (if trauma suspected), establish patent airway and breathing, if indicated. Move victim away from contact with hazardous material to a clean area. Rescuers in level "A" (fully encapsulated suit with self-contained breathing apparatus) equipment may not be physically able to do anything more than drag victims on to a back board and then drag them out of the Hot Zone. If not breathing, and if physically possible to quickly accomplish, give oxygen using bag valve mask with reservoir device or manually triggered oxygen powered breathing device.
4.	If ambulatory, victims should be directed to leave the hot zone, assist others with evacuation, and decontaminate themselves following the directions below under the direction of the decontamination supervisor.
5.	If clothing has been contaminated, strip the victim and double-bag clothing, then flush the entire body with plain water for 2-5 minutes. Clothing contaminated with dust should be removed dry with care taken to minimize any dust becoming airborne If circumstances, time, and practice allow, a dust mask or respirator should be placed over the victim's nose or mouth. Dust should be brushed off of the face prior to fitting the mask or respirator
6.	Flush exposed eyes and other body surfaces with copious plain water for 2-5 minutes. Eye irrigation should continue for at least 10-15 minutes preferably with saline.
7.	If contaminant is oily or greasy, soap and/or shampoo may be used followed by additional water flushing.
8.	Clean under nails with scrub brush or plastic nail cleaner.

V. PREHOSPITAL CARE

A. Field Response

Because chemicals are used extensively in our society, the potential for hazardous materials accidents exists almost everywhere. Hazardous material incidents range from relatively confined site-specific events to rapidly expanding accidents that endanger a sizable community. Regardless of its size, an incident's successful management requires pre-planning and interagency coordination.

Managing the victims of a hazardous materials incident necessitates the coordination of many resources and agencies. Roles of various agencies vary to some extent according to the county's hazardous material area plan. Generally, fire fighters and law enforcement officers are the first to arrive on scene and may obtain important information about the chemicals involved. They will designate an Incident Commander to manage incident operations at the scene. Special Hazardous Material (Hazmat) Units (either Health Department or Fire Department) may be available to provide additional guidance in identifying and managing the hazardous materials and to perform decontamination of equipment, environment, victims, and personnel. Emergency Medical Services (ambulance) personnel transport the victims who have already been decontaminated (if necessary) and manage their medical problems en route to the hospital. In the event of a disaster, the county Office of Emergency Services and the local EMS agency will become involved in resource coordination. Finally, the local hospital emergency department will receive and care for the victims.

The emergency medical service prehospital providers responding to a hazardous materials incident have five goals:

Table 4. Five Goals or Pre-Hospital Provider

C	To protect themselves and other prehospital responders from any significant toxic exposure;
C	To obtain accurate information on the identity and health effects of the hazardous materials and the appropriate prehospital evaluation and medical care for victims;
C	To minimize continued exposure of the victim and secondary contamination of health care personnel by ensuring that proper decontamination (if necessary) has been completed prior to transport to a hospital emergency department;
C	To provide appropriate prehospital emergency medical care consistent with their certification; and,
C	To prevent unnecessary contamination of their transport vehicle or

B. Hazard Information About Specific Chemicals

Every effort should be made to obtain accurate information about the health hazards of the toxic materials involved in the incident, the potential for secondary contamination, and the level of decontamination required, if any. Information may be Obtained from the Incident Command Safety Officer, the base hospital, or the Regional Poison Control Center.

C. Prehospital Provider Protection

Prehospital health care providers who are not members of the hazardous materials team and properly outfitted with protective gear should not enter the contaminated area (hot zone and decontamination corridor, as shown in Diagrams 1 and 2 or page 12 and page 13) but instead must wait at the perimeter for decontaminated victims to be brought to them. It is assumed that members of the hazardous materials team working in the hot zone and decontamination area are trained and capable of providing initial airway and spine stabilization and basic decontamination. Rescuers wearing level "A" (fully encapsulated suit with self-contained breathing apparatus) equipment will probably experience several factors that will limit their ability to provide emergency care in the hot zone such as: Vision impairment, reduction in dexterity (lifting, disentangling, etc.), limited air support, and heat stress. Other factors such as the number of rescuers allowed into the hot zone will also limit what care can be given.

The table below "Emergency Medical Services Vehicle Equipment for Hazardous Materials Incidents," identifies how an ambulance should be outfitted to respond to a hazmat incident.

EMERGENCY MEDICAL SERVICES
VEHICLE EQUIPMENT FOR HAZARDOUS MATERIALS INCIDENTS *

Table 5. EMS Vehicle Equipment for Hazardous Materials Incidents

C	Binoculars to assess scene from a safe distance.
C	Plastic (1-2O mil, preferably clear) trash bags (3 or. 4 mil) to isolate and dispose of contaminated articles and toxic vomitus. Plastic sheeting to cover floor of ambulance the rare case where a contaminated victim must be transported, or if the victim might vomit ingested toxic material.
C	A large supply of oxygen to treat breathing problems caused by exposure to Hazardous Materials. (More than is usually carried.)
C	A large wash basin, bucket, or plastic waste basket which can be lined with a trash bag collect contaminated eye wash water or vomitus.
C	Disposable plastic coated blankets (or "chucks") to soak up and isolate liquids from a decontaminated patient Use these for absorbing toxic vomitus.
C	Disposable gowns and slippers for patients who must remove contaminated clothes at scene and for EMS personnel (Long sleeve gowns) to cover outer clothes.
C	Disposable surgical or examination gloves.
C	Surgical or other paper masks.
C	Waterproof disposable shoe covers.
C	Splash goggles or face shields to protect EMS personnel from splashes while they work on the patient.
C	Inexpensive stethoscopes blood pressure cuffs and other gear which can be discarded if contaminated.
C	Isotonic saline and IV tubing for eye irrigation.
C	A Bag Valve Mask (BVM) or similar device in lieu of mouth to mouth respiration (Pocket masks are NOT acceptable.)
C	Liquid soap for washing off oily contaminants.
C	Epsom salts for soaking hydrofluoric acid burns.
C	Shears or sharp knife for removing clothing from victim.
C	Copy of the current "DOT" Emergency Response Guidebook a copy of these protocols and other appropriate medical management protocols

Source: Based on a that prepared by the Contra Costa/ Solano County Joint Emergency Medical Service Hazardous Materials Response Program.

Additional equipment is necessary for handling radiation contamination. See: Emergency Department Radiation Accident Protocol. Leonard RB, Ricks RC. Annals of Emergency Medicine. 9:9:462-70, 1980. Also, see Medical Management of Radiation Accidents. Mettier FA. Kelsey, CA Ricks RC. CRC Press, Florida, 1989.

D. Prehospital Decontamination

Unprotected EMS responders must advise on and observe the decontamination procedures from a distance to ensure that they are properly carried out. They should practice with the local hazmat team to become familiar with the steps involved. If there **is any doubt about** the potential for **secondary contamination, decontaminate** the victim. A contaminated appendage can be washed without wetting the whole body if that is the only part contaminated. Clothing covering the rest of the body and exposed skin should be carefully checked for contamination.

If victims are already properly decontaminated before they are brought to health care providers at the perimeter of the hot zone/decon area, they will pose very little, if any, risk to the prehospital health provider or their vehicle. Thus, health care providers will not generally need to use any specialized protective gear, even for substances considered as potential secondary contaminants.

In many cases (e.g., corrosive materials in the eye; oily pesticide skin exposure), prehospital health care personnel may need to repeat or continue decontamination procedures (e.g., eye irrigation; soap/water skin wash) after receiving the victim at the perimeter. Although specialized protective gear should not be necessary, it is prudent for providers to don the protective gear listed in the Table 5. (Some of these items are often carried as a "communicable disease" kit.) All leather items, wool or other highly absorbent materials that cannot be decontaminated should be removed prior to providing care.

No provider should put on a respirator or other specialized gear unless that worker has been previously fitted and trained in its use.

If the transport vehicle is inadvertently contaminated, advice from the local environmental health department, hazardous materials team, or local hazardous materials spill clean-up companies should be sought on how to determine the level and location of the contamination and on how to clean it up. Advice should also be sought on how to preserve evidence for law enforcement, and dispose of or clean contaminated clothing and personal items.

E. Prehospital Triage

Victims with obvious significant illness or injury will need rapid transport and treatment after initial stabilization and basic decontamination is carried out. In virtually all cases, patients with serious trauma or medical illness can be quickly stripped and flushed with water prior to delivery to prehospital health providers outside the hot zone. This is true even in cold or inclement weather. If this cannot be performed because of acute life-threatening conditions or other circumstances, then the vehicle must be protected and those providing care during transport and driving the vehicle must be properly fitted and trained with the appropriate level of specialized protective gear. However, every effort should be made to decontaminate the victim at the scene if the means to do so are available. In those jurisdictions where a prehospital provider might be placed in such a situation without assistance from a properly trained hazmat specialist, advance arrangements for additional training and protective equipment should be made.

Consult the specific protocols for recommended prehospital care of exposed victims. *Note that some of the management protocols may exceed the EMT-II or paramedic scope of practice in a local area. Refer to your local EMS agency medical director for guidance.*

Victims with few or minimal symptoms are not necessarily safe from progression of illness. Many toxic substances have delayed onset effects, which may appear several hours later, after the victim has returned home. If the toxic substance is known, obtain consultation from the Regional Poison Control Center to determine if delayed effects might be seen and for guidance on triage of asymptomatic or mildly symptomatic exposure victims. Any persons suspected of being exposed should be seen and evaluated by emergency department staff.

F. Decontamination of Prehospital Personnel

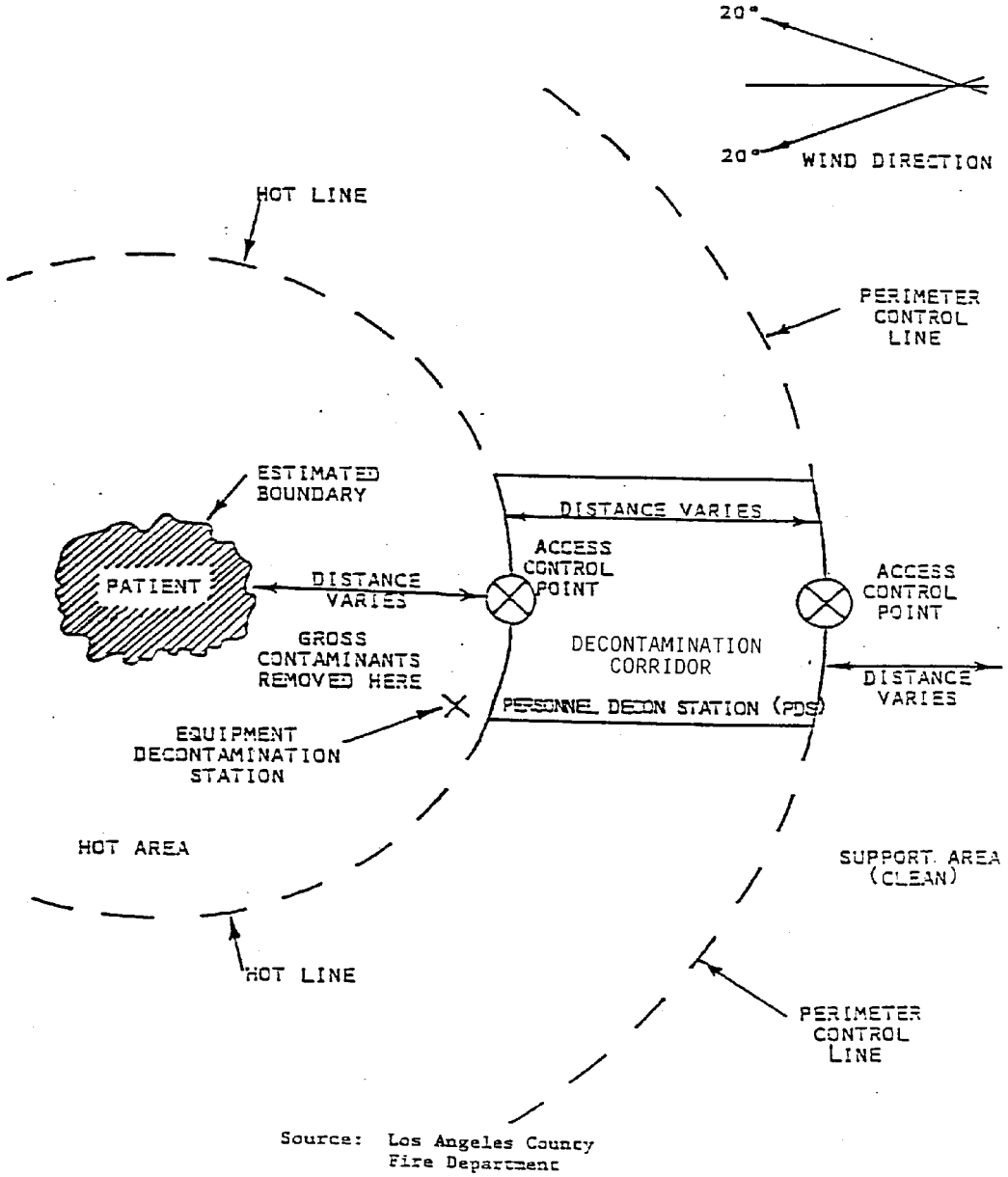
Prehospital workers will not normally need personal decontamination. In those rare circumstances where they have been in the hot zone or have attended to a victim who was not properly decontaminated, they should consider themselves to be potentially contaminated. Consult the lists above or knowledgeable sources to determine the risk of secondary contamination, since in many, if not most cases, no personal decontamination will be necessary. Information can be obtained from the Incident Command Safety Officer at the scene, the base station hospital, or the Regional Poison Control Center. **If in doubt, decontaminate.**

G. Victim and Response Personnel Follow-up

The names, addresses, and telephone numbers of all personnel and victims who have been or may have been exposed at a hazmat scene should be recorded for future notification if it is subsequently determined that medical evaluation or treatment is required.

DIAGRAM 1

ORGANIZATION OF
HAZARDOUS MATERIAL INCIDENT AREA



Source: Los Angeles County
Fire Department

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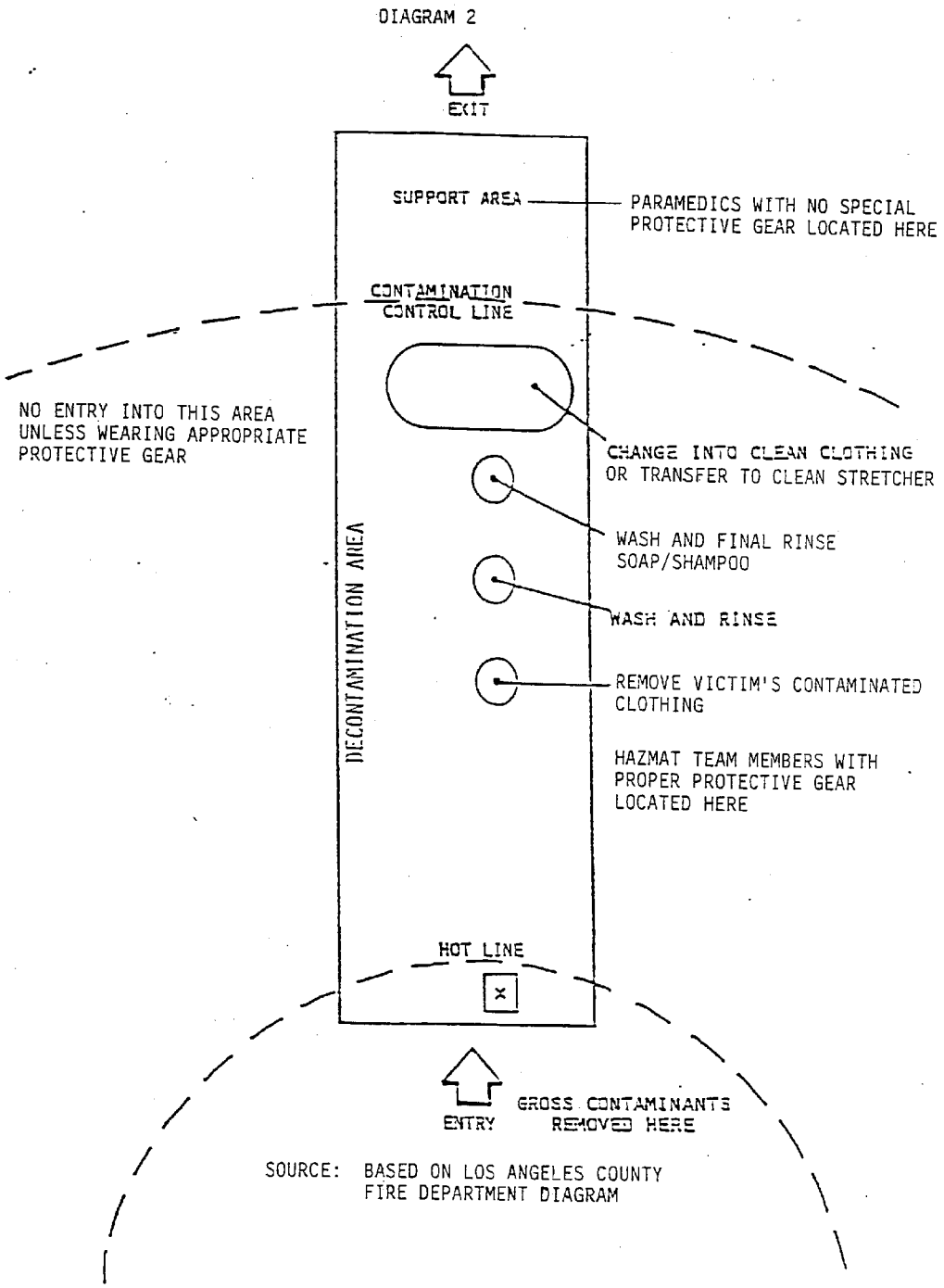
Source: L.A. County Fire Dept.



Source: Based on L.A. County
Fire Dept. Diagram

VI. EMERGENCY DEPARTMENT CARE

In managing a victim who has been exposed to a hazardous material and who may be contaminated or who is not known to have been adequately decontaminated before arrival at the hospital, the emergency department staff has five goals:

Table 6. Emergency Department Goals

C	To protect hospital staff members from any significant toxic exposure;
C	To minimize any additional exposure of the victim to the toxic substance (eg, in the event that the victim's clothing is soaked);
C	To evaluate quickly whether the victim is in immediate danger of dying a needs immediate endotracheal intubation, CPR or other emergency procedures;
C	
C	To quickly determine the toxic identity and effects of the hazardous materials and to provide specific treatment if indicated; and,
C	To prevent hospital contamination and to protect passers-by from any significant toxic exposure

A. Preplanning and Need to Determine Risk for Secondary Contamination

An important part of any chemical disaster pre-planning is to survey the area surrounding the hospital to determine which types of hazardous materials are used by local industries. It is noteworthy that the JCAH Accreditation Manual for Hospitals, 1986, calls for hospitals to participate in community planning whenever feasible (Section 3.1.1.1). The emergency department administrator should become familiar with the county Hazardous Material Area Plan which identifies procedures to be used to coordinate the management of hazardous materials and to establish roles and responsibilities for government agency actions in response to a hazardous material incident. The name of the agency responsible for preparing and maintaining the Hazardous Material Area Plans in your region can be obtained from the Office of Emergency Services, Hazardous Materials Division (916-427-4287).

In order to obtain more detailed information on specific chemicals used by nearby industries, some emergency departments have obtained copies of the Material Safety Data Sheets (MSDSs) from local industries and keep them on file. According to federal and state legislation, employers must provide the information contained on an MSDS to health care providers who need the information to care for an affected patient.

The information must be provided without regard to "trade secrets" in an emergency. However, it is not generally practical to keep large numbers of MSDSs in an indexed, usable filing system which can be relied upon in an emergency. MSDSs contain basic chemical, reactivity, and toxicology data, but are usually very limited in medical treatment information and are of variable technical quality. In addition, they rarely provide information regarding the potential for secondary contamination or recommendations for decontamination. The Regional Poison Control Centers are the best sources of acute health effects information on hazardous materials.

To locate information about the risk for secondary contamination of health care personnel, other patients in the department, and the hospital facility, call the Regional Poison Control Center
(see page 36).

B. The Contaminated Victim

In the ideal situation, victims will already be properly decontaminated before they are brought to the emergency department, and they will pose very little, if any risk to the hospital health provider or the facility.

However, a written protocol must be prepared for those situations where a victim, heavily contaminated with a highly toxic chemical, arrives at the emergency department (e.g., a walk-in). If a victim contaminated by a substance with serious potential for secondary contamination has already entered the emergency department, separate zones should be set up by the emergency room charge person:

1) the contamination area,
2) a designated decontamination area (preferably outside), and
3) a clean zone.

The contaminated area should be marked and isolated. Personnel must not be allowed to indiscriminately enter or leave these zones unless checked for contamination.

The best course of action for most facilities is to call the fire department hazmat team (if there is one) to come to the emergency department and set up a decontamination area outside the ambulance entrance. A practical alternative is to provide simple but effective decontamination outside the ambulance entrance using an inflatable "kiddie" pool, or shower, and soap (Green soap(R), New Dawn (R), or any mild dishwashing detergent). The victim can often remove his/her own clothing and wash off the material. Provide plastic bags for double-bagging contaminated clothing, and if available, a tent or curtain for victim privacy. Victims who are not ambulatory can be decontaminated by appropriately protected and trained hospital staff on a protected gurney in the same area. Establishing the decontamination area outside of the emergency department is important because of the potential risk of secondary contamination by inhalation of toxic vapors or dusts.

If the hospital emergency department is located in a highly industrialized area and can expect to receive contaminated victims, consideration should be given to training staff to use Self-contained Breathing Apparatus (SCBA) and other appropriate protective equipment. The local hazmat team or an industrial hygienist should be consulted about training requirements, equipment, frequency of training, and other relevant safety details. The county health department should be contacted to determine how to dispose of the contaminated water.

C. Protective Clothing for Hospital Staff

If proper decontamination has been carried out prior to transport, no specialized protective gear should be required for hospital staff. Disposable surgical gowns, aprons, gloves and shoe coverings may be appropriate (Table 7). In the vast majority of circumstances, the equipment in the following table will adequately protect emergency department staff as they remove soaked clothing, wash the victim's skin/hair with soap/shampoo, or perform eye irrigation. With very concentrated acids or caustics or with substantial amounts of oily or lipid-soluble liquids (e.g., pesticides), disposable Tyvek or Saranex coveralls and unmilled nitrile gloves will probably offer sufficient protection until the victim can be decontaminated. Advice on appropriate suits and gloves can be obtained from the local hazardous materials team, or the Regional Poison Control Center. Hospital staff should remove all leather items, wool clothing and other materials that cannot be easily decontaminated. Consideration should be given to obtaining disposable medical equipment. Personnel without adequate personal protective equipment should not be in close proximity to victims who are grossly contaminated or being decontaminated.

If simple outdoor decontamination is not possible, arrangements should be made in advance with a qualified industrial hygienist to obtain special protective respiratory equipment and to provide training in its proper use.

No provider should be asked to put on a respirator or other specialized gear unless that worker has been fitted and trained in its use.

Table 7. Suggested Equipment List for Management of Hazardous Materials Contamination, Part I.

The following emergency supplies should be stored in an area near the emergency department rear entrance and checked periodically (e.g., quarterly):

- **!** Written procedures for handling chemically contaminated victims.
- **!** Protective clothing for staff:

  For 'most circumstances: Disposable gowns, surgical masks, plain latex gloves (enough for double gloving), shoe covers, splash goggles (at least two pair), aprons, caps. At least some of the gowns, aprons and shoe covers should be impervious to water.

  For heavy chemical or corrosive contamination: At least 2 Tyvek or Saranex suits and 2 pair unmilled nitrile gloves (be sure to check with Poison Control or Hazmat team to see if they are compatible with the particular hazardous substance involved).

  Note: Respiratory protective gear is not generally available and, in addition, should. not be used unless it is properly maintained and staff have been properly fitted and trained in its selection and use. Therefore, if inhalation exposure is a risk, decontamination should be done outside.
- **!** Decontamination supplies:

  Inflatable “kiddie" pool (large) with foot operated air pump (or other means of collecting decontamination water), large plastic tarp to place under pool forming an outer containment area, 55 gallon plastic trash cans to hold water, mild dish washing detergent or soap in squeeze bottle, sponges, absorbent pads for washing, nail brush, tent or curtain for privacy, exterior wall water outlet/shower nozzle hooked up to luke warm (or cold) water supply.

  Metal gurney or morgue table for non-ambulatory patients.

  Alternatively if a dedicated decontamination room is provided, plans must be made for separate exhaust ventilation, adequate ventilation (at least 6 changes/hour), plastic sheeting to cover floor, 2 inch tape to secure plastic, means of containing contaminated water, and respiratory protective gear for staff who may be in an enclosed space with volatile hazardous materials. (Note, any employee required to use a respirator must be medically cleared, fitted, and trained.)

  Plastic bags for double bagging contaminated clothing (preferably clear).

  Diking or absorbent material: Dikes can be made by taping the edges of a large plastic tarp or sheets of plastic draped over a ladder turned on its side or rope strung horizontally, Absorbent materials such as kitty litter, pillows, diapers, or other similar material may be useful to absorb spills.

Table 7. Suggested Equipment List for Management of Hazardous Materials Contamination, Part II.

Saline and IV tubing !or eve irrigation set-up.

Note that special "decontamination solutions" and neutralizing. agents are not recommended except in specific rare circumstances {e.g., hydrofluoric acid). Water (and perhaps soap) are the recommended means of decontaminating victims. Extra care needs to be given to victims contaminated with water-reactive substances: Consult your poison control center.

! Other supplies:

Wall Suction with disposable collection bag to hook up to gastric tube to remove and isolate toxic vomitus.

Extra medical supplies or equipment which. could be taken out of service temporarily if contaminated (including crash cart with ambu bags, defibrillator, EKG monitoring equipment, IV stands, etc).

Inexpensive medical equipment which could be disposed of if contaminated (including stethoscope, blood pressure cuff, etc.)

Tape and rope for marking off perimeters

Plastic sheeting (4 mil) for covering floor or covering entrance to and floor of decontamination area for materials with high potential for secondary contamination.

2 inch tape for securing plastic.

Cotton-tipped applicators and stoppered glass containers for swabs of hazardous materials for laboratory analysis, or evidence for later prosecution of the party responsible for the hazmat spill.

! Special medical treatment supplies:

See specific treatment protocols

Source: Based on a list prepared by the Contra Costa/ Solano County Joint Emergency Medical Service Hazardous Material Response Program. Additional equipment is necessary for handling radiation contamination. See: Emergency Department Radiation Accident Protocol. Leonard RB. Ricks RC. Annals of Emergency Medicine. 9:9:462-70. 1980. Also, see Medical Management of Radiation Accidents. Mauler FA, Kelsey. CA Ricks RC. CRC Press, Florida. 1989.

D. Decontaminating the Victim

If decontamination is required, a thorough wash-down of the victim's skin for a few minutes with plenty of soap and water is generally adequate (see Section IV, p.20, for basic decontamination protocol). However, for chemical contamination of an open wound, gentle scrubbing or irrigation of the wound for 5-10 minutes or longer is advisable, using lukewarm water. With eye exposures, irrigation of the eyes with sterile saline should be carried out for at least 15-30 minutes. Check conjunctival sac PH if exposure was to an acid or alkaline material. Contaminated facial and nose hair and ear canals should be gently irrigated with normal saline, using frequent suction. If there is **any doubt about contamination, decontaminate the victim.** A contaminated appendage can be washed without wetting the whole body if that is the only part contaminated. Clothing covering the rest of the body and exposed skin should be carefully checked for contamination. Following decontamination, specific medical management of the victim can be addressed.

Gastric lavage should be performed if ingestion is suspected. Use wall suction and an isolated collection bag to avoid exposure to liquid or vapors of toxic vomitus. Administer activated charcoal after lavage is completed.

E. Medical Management or the Victim

In a life-threatening emergency, a decision to delay patient care because of concerns about contamination and possible exposure of hospital staff will require considerable clinical judgement. Delay may be necessary with certain extremely hazardous substances present in significant quantities on or near the victim. The Regional Poison Control Center (see pp.22-24) can provide emergency assistance in making these decisions. In reality, a delay in starting treatment because of such concerns will only rarely be required. Attention to the basic ABCs of life support (airway, breathing, and circulation) should be given if it does not pose a significant risk to the care giver.

The most important step for the Emergency physician is to get information about <u>what</u> hazardous substances are involved and what estimated <u>dose</u> the victim received. This information will often have been obtained by the EMS personnel, fire, police, or Hazmat team responding to the episode. If this information does not accompany the victim to the Emergency Department, the hospital staff can direct the EMS, fire or police who accompany the patient to obtain the information from the Incident Commander at the scene.

F. Decontamination or Hospital Staff and Clean Up

Health care workers who attend to victims who have not been previously decontaminated should consider themselves to be potentially contaminated. Consult the lists in Section II.B. above or the Regional Poison Control Center to determine the risk of secondary contamination. In many (if not most) cases, no personal decontamination will be necessary. However, if *in doubt, decontaminate.*

Procedures for post-emergency clean-up including disposal of contaminated wastes should be addressed by written protocol. Hazardous waste must be disposed of properly, and not mixed with non-hazardous trash. Advice on disposal of hazardous waste can often be obtained from the Health Department or the Hazmat team.

In dealing with the problem of contaminated corpses, the important objectives are to limit the spread of contamination within the hospital and to protect transport personnel and personnel in the coroner's office or other pathology staff. A corpse with known or suspected significant contamination can be easily decontaminated in the emergency department, particularly if a contamination zone has already been established and other decontamination activities are being carried out. Depending on the nature of the contaminant, the clothing can be removed and double bagged, and the body washed. Be careful to save samples or swabs of the material, if not already identified, as legal evidence. These can be saved in a sealed, clean test tube or specimen container.

The contaminated corpse should be double body-bagged. The body bag should have a prominent label indicating that the corpse is contaminated and the nature of the contaminant. Emergency department staff should record the telephone number of the coroner or pathologist on the label for more information about the nature of the contamination. All deaths resulting from toxic exposure are coroner's cases and the hospital staff should notify the Coroner's office.

G. Security

The emergency department hazardous materials incident protocol should indicate that hospital security or engineering staff will be notified to help with isolating and managing a potential contamination problem.

A protected and trained security person assigned to the decontamination zone can assist in handing equipment and supplies in to the contaminated zone, and completing the double-bagging of contaminated clothing or other articles before handing them out to the clean zone. Security or engineering personnel can also assist in preventing the spread of contaminated puddles of water on the floor (by the use of dikes, for example), in securing the ventilation system if necessary so that contaminated air does not circulate to the rest of the building, and in setting up an outdoor decontamination station.

H. After the Incident

Hospitals are subject to two major reporting requirements with regard to hazardous materials victims:

- Occupational Illness or Injury: Illnesses or injuries occurring in the course of employment must be reported by the treating physician in a "Physician's First Report of Occupational Ill ness or Injury." New versions of this form were released in 1989 and are available by calling (415) 557-1924.

  In the event of a death occurring in the course of employment, employers are responsible for calling the Occupational Safety and Health Administration (OSHA). Cal-OSHA is responsible for all employers except federal agencies.

- Pesticide Poisoning: The State of California mandates that illnesses due to pesticide poisoning, even if not occupational in origin must be reported by telephone within 24 hours to the local health officer for the area in which the poisoning occurred. A follow-up written report, submitted on a "Physician's First Report of Occupational illness or Injury" or a comparable form must be submitted within one week of the telephone report.

Following the completion of the response to the incident, a critique should be conducted with all of the staff involved. Only by a thorough review of the events can mistakes be corrected and procedures modified for improving the management of future incidents.

VII. SOURCES OF ACUTE HEALTH HAZARDS INFORMATION

A. California's Poison Control Centers
February 1991

University of California Davis Medical Center
Regional Poison Control Center
2315 Stockton Boulevard
Sacramento, CA 95817

Public: (800) 342-9293
Local: (916) 453-3692

Medical Director:
(916) 734-3564
Administration:
(916) 453-3414
FAX: (916) 734-7796

Medical Director: T. E. Albertson, M.D., Ph.D.
Director: Judy Alsop, Pharm.D.

Counties Served:

Alpine	Glenn	Plumas	Solano	Yolo
Amador	Lake	Sacramento	Stanislaus	Yuba
Butte	Lassen	San Joaquin	Sutter	
Calaveras	Modoc	Shasta	Tehama	
Colusa	Nevada	Sierra	Trinity	
El Dorado	Placer	Siskiyou	Tuolumne	

San Francisco General Hospital
San Francisco Bay Area Regional Poison Control Center
1001 Potrero Avenue, Room 1E86
San Francisco, CA 94110

Public: (800) 523-2222
Local: (415) 476-6000
Hazardous Materials:
(415) 821-5338

Administration:
(415) 821-5524
Education Materials:
(415) 821-5265
Health Education:
(415) 821-8554
FAX: (415) 821-8513

Medical Director: Kent R. Olson, M.D.
Director: Thomas E. Kearney, Pharm.D.

Counties Served:

Alameda	Marin	San Mateo
Contra Costa	Mendocino	Sonoma
Del Norte	Napa	
Humboldt	San Francisco	

Santa Clara Valley Medical Center
Regional Poison Control Center
751 South Bascom Avenue
San Jose, CA 95128

Public: (800) 662-9886
Local: (408) 299-5112

Medical Director: Michael Collins, M.D.
Director: Gary Everson, Pharm.D.

Health Education:
(408) 299-5112
FAX: (408) 386-2344

Counties Served:

Monterey	Santa Clara
San Benito	Santa Cruz
San Luis Obispo	

Fresno Community Hospital
Fresno Regional Poison Control Center
Fresno and R Streets
P.O. Box 1232
Fresno, CA 93715

Public: (800) 346-5922
Local: (209) 445-1222

Health Education:
(209) 442-6000
Ext. 5759

Medical Director: Rick Geller, M.D.
Director: Brent R. Ekins, Pharm.D.

Counties Served:

Fresno	Kings	Mariposa	Tulare
Kern	Madera	Merced	

Los Angeles County Medical Association
Regional Poison Control Center
1925 Wilshire Boulevard
Los Angeles, CA 90057

Public: (213) 484-5151
(800) 777-6476
Physician/
Hospitals Only:
(213) 664-2121
(800) 825-2722

FAX: (213) 413-5255

Medical Director: Mare Bayer, M.D.
Administrator: Michael Weiland

Counties Served:

Los Angeles	Ventura	Santa Barbara

University of California San Diego Medical Center
San Diego Regional Poison Center
225 Dickinson Street
San Diego, CA 92106-9981

Public: (800) 876-4766
Local: (619) 543-6000

Health Education:
(619) 543-3666
FAX: (619) 692-1867

Medical Director: George Shumaik, M.D.
Director: Anthony Manoguerra, Pharm.D.

Counties Served:

San Diego
Imperial

University of California Irvine Medical Center
Regional Poison Control Center
101 The City Drive, Building 1, Route 78
Orange, CA 92668

Public: (800) 544-4404
Local: (714) 634-5988

Health Education:
(714) 634-5730
FAX: (714) 937-7858

Medical Director: Philip Edelman, M.D.
Director: Richard Thomas, Pharm.D.

Counties Served:

Inyo
Mono
Orange
Riverside
San Bernardino

B. Other Sources of Information about Toxics and Hazmat Spills

The California Department of Health Services has compiled a directory of sources of information about toxics, "The Toxics Directory: References and Resources on the Health Effects of Toxic Substances." Hazard Identification and Risk Assessment Branch

California Department of Health Services
2151 Berkeley Way
Berkeley, CA 94704
(415) 540-3063

VIII. HAZARDOUS MATERIALS

MEDICAL MANAGEMENT

PROTOCOLS

UNKNOWN MATERIAL

FORMS:

This section assumes that a victim has been exposed to a hazardous material which cannot be identified in the form of a gas or vapor, liquid, or solid/dust.

BACKGROUND:

Every attempt should be made to identify the substance involved using placards, shipping papers, or other means. However, if such identification is impossible, responders should make worst case assumptions about the material. Rescuers should assume that the material may be:

a. Poisonous by inhalation, ingestion, and cutaneous absorption;

b. Corrosive (either acidic or alkaline);

c. Lipid soluble, and therefore able to penetrate certain types of protective clothing and protective gear, and able to be absorbed through intact skin;

d. Oily and persistent on skin and clothing, and therefore difficult to decontaminate; and,

e. Reactive and likely to give rise to irritant or poisonous gases on contact with water or heat.

POTENTIAL FOR SECONDARY CONTAMINATION:

Victims contaminated with an unknown liquid or solid/dust material should be assumed to be carry a risk of secondary contamination. If the victim's only exposure was to small amounts of gas or vapor, the risk of secondary contamination to health care personnel away from the scene is probably very small. Theoretically, small amounts of gas might be trapped in a victim's clothing. In such a situation once the clothing had been removed and double-bagged, the risk to rescuers would be minimal. However, if the exposure involved an aerosol which might condense on a victim's skin or clothing, there would be a potential for secondary contamination until decontamination had been carried out. For exposures involving direct contact with an unknown liquid or solid material or dust, rescuers should assume that the victim poses a risk of secondary contamination until decontaminated. When in doubt, decontaminate the victim (see Section IV, p.20).

UNKNOWN MATERIAL

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. In general, until the possibility of fire, explosion, or serious reactivity has been ruled out, rescuers will not enter the Hot Zone. Once entry appears to be feasible, rescuers should don fully encapsulated protective clothing and gloves capable of withstanding both corrosives and hydrocarbon solvents, and self-contained breathing apparatus.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double bag clothing. Flush skin with water spray for 1 - 2 minutes. If the victim complains of eye irritation, have the victim remove contact lenses if able to do so. Irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don protective equipment (self-contained breathing apparatus) capable of withstanding brief exposure to both corrosives and hydrocarbon solvents. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center. In addition, wash oily contaminated areas, including skin or hair, with soap and/or shampoo.

2. Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. Support BP if needed, with IV crystalloid solutions. Treat bradycardia with atropine or other modality appropriate to the patient's clinical status.

4. Consider aerosolized bronchodilators if significant wheezing is present.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

6. Even if significant ingestion is suspected, do not induce vomiting. Instead, if the victim is conscious and able to protect the airway, immediately dilute with 1 glass of water and give activated charcoal 60 - 100 grams if available. *Do NOT give activated charcoal if a corrosive is suspected.*

7. Continue to irrigate injured eyes or exposed areas of skin for at least 15 to 20 minutes if the victim continues to complain of discomfort.

8. Treat seizures with diazepam (Valium):

   5 - 10 mg IV for an adult; and,

   1-2 mg IV for children.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don protective equipment capable of withstanding brief exposure to both corrosives and hydrocarbon solvents, and self-contained breathing apparatus. Activate basic decontamination protocol (See Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center. In addition, wash oily contaminated areas with soap and/or shampoo.

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Obtain arterial blood gases, chest x-ray, and electrocardiogram in seriously symptomatic patients. Administer high flow oxygen if the victim has respiratory distress or altered mental status. Aerosolized bronchodilators will probably be helpful, and are seldom contraindicated, for most cases of bronchoconstriction due to hazmat exposures. Monitor cardiac rhythm.

4. DIAGNOSTIC CONSIDERATIONS - For a hazmat victim with cardiorespiratory collapse, consider the diagnosis of generalized cellular poisoning (cyanide p. C.3.1., azide, sulfide p. H.3. 1., for example). Always consider the diagnosis of carbon monoxide poisoning (see p. C. 1.1). In the appropriate setting, consider the diagnosis of exposure to anti-cholinesterase pesticides and the possible use of atropine in a patient with bradycardia, wheezing, seizures, and/or other signs of cholinergic stimulation (see p. P.2.1 and P.3.1). Consider the diagnosis of methemoglobinemia for patients with cardiopulmonary distress (see p. N. 1.1). If there is a concomitant likelihood of cyanide exposure, as for example through smoke inhalation, nitrites should generally not be used to treat methemoglobinemia. If the hazmat victim appears to have suffered substantial skin exposure to a corrosive liquid, be aware that patients with significant hydrofluoric acid exposure, as manifested by painful burns or dramatic respiratory injury, may require prophylactic IV calcium as well as specialized treatment for exposed skin areas (seep. H.2.1).

5. Treat seizures with diazepam (Valium):

   5 - 10 mg IV for an adult; and,

   1-2 mg IV for children.

6. Appropriate lab studies, in addition to other routine and indicated studies such as electrolytes and glucose and anion and osmolar gap, might include carboxyhemoglobin, methemoglobin, calcium, plasma and RBC cholinesterase levels, liver function studies, methanol level, and serum lactate.

7 Treat skin and eye exposures with copious irrigation, for at least 15 to 20 minutes. If eye irritation persists, perform a fluorescein and slit-lamp examination to rule out corneal injury.

8. In patients who present with initial symptoms of respiratory irritation or distress, be alert for the development of delayed onset pulmonary edema, up to 24 hours after the exposure.

9. In cases of significant ingestion, treat as for other types of toxic ingestion with gastric lavage and/or administration of activated charcoal (unless ingestion of a corrosive is suspected); do not induce vomiting. Consider saving a sample of gastric contents for possible subsequent lab analysis, but isolate them in a closed container as soon as possible. Be aware that gastric washing may contain volatile material that could potentially expose hospital personnel to noxious vapors. If corrosive injury to the victim's esophagus is suspected, consider consultation with gastroenterologist or surgeon for possible endoscopy.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___)___-____

ACIDS & ACID MISTS
(NOT Including Hydrofluoric Acid)

FORMS:

Gas, liquid (variable concentrations), mixtures with water, and aerosolized dusts.

BACKGROUND:

Acids act as direct irritants and corrosive agents to skin and moist mucous membranes. Severe burns may result. Generally, these substances have very good warning properties; even fairly low airborne concentrations of acid mists, or vapors produce rapid onset of eye, nose and throat irritation. Inhalation of higher concentrations can produce cough, stridor, wheezing, chemical pneumonia or non-cardiogenic pulmonary edema. Occasionally, pulmonary edema may be delayed for several hours, especially with low-solubility gases such as nitrogen oxides (given off by nitric acid). Ingestion of acids can result in severe injury to the airway, esophagus and stomach.

POTENTIAL FOR SECONDARY CONTAMINATION:

Small amounts of acid mists can be trapped in clothing after an overwhelming exposure but are not usually sufficient to create a hazard for health care personnel away from the scene. However, clothing which has become soaked with concentrated acid may be corrosive to rescuers. Once the victim has been stripped and flushed with water, there is no significant risk of secondary contamination. Decontamination is not necessary for victims with inhalation exposure only.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus particularly if mists or vapors are present.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Flush exposed skin with water spray. If clothing has been soaked by acid or acid spray, remove and double-bag clothing and flush skin for I - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

ACIDS & ACID MISTS
(NOT Including Hydrofluoric Acid)

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section **m,** p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing and circulation). Re-evaluate airway, intubating the trachea if victim has developed severe respiratory distress. Provide high-flow oxygen by mask. Attach cardiac monitor.

3. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victims with wheezing.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

5. Victims with minimal or quickly resolving symptoms probably do not require immediate evaluation in the emergency department. However, remember that with certain acids and low-solubility gases (e.g., fuming nitric acid forming nitrogen oxides) pulmonary edema may occur after a delay of 12-24 hours.

6. **Ingestion: DO NOT induce vomiting.** Immediately dilute with 1 glass of water or milk.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.31).

   Remove and double-bag clothing if not already done. Wash exposed skin copiously with water. Decontamination is probably not needed for acid exposures unless the victim's skin or clothing has been soaked with acid liquid.

2. Evaluate ABCs (airway, breathing, and circulation). Watch for signs of airway closure and laryngeal edema, such as hoarseness, stridor, or retractions.

3. Administer oxygen by mask. Bronchodilators may be helpful for wheezing. Intubate if patient manifests severe respiratory distress from pulmonary edema or upper airway swelling. Obtain arterial blood gases and chest x-ray if respiratory distress is present. If respiratory distress is present or if exposed to low-solubility gases such as nitrogen oxides, admit and observe 24 to 48 hours for possible delayed onset of pulmonary edema. Severe upper airway edema may necessitate endotracheal intubation or cricothyrotomy.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain Iv tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. If a significant ingestion occurred, consider endoscopy to evaluate injury to the esophagus and stomach.

6. Advise patient that full recovery is generally the rule, but cases of chronic airway disease have been reported following severe exposures. Advise and arrange for follow-up in case victim begins to experience respiratory distress. After exposure to oxides of nitrogen, sudden severe relapse may occur two to three weeks later.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 11/01/90

AMMONIA (LIQUID AND GAS)

FORMS:

Gas (anhydrous) and liquid (aqueous solutions, variable concentrations).

NOTE: Liquified compressed gas may produce cryogenic (freezing) hazard as it is released into the atmosphere.

BACKGROUND:

Ammonia (NH_3) is a direct irritant and alkaline corrosive agent to moist mucous membranes and, to a lesser extent, to intact skin. Ammonia has very good warning properties. Even fairly low airborne concentrations produce rapid onset of eye, nose and throat irritation. Higher concentrations can produce cough, stridor, wheezing, chemical pneumonia or non-cardiogenic pulmonary edema. The onset of pulmonary edema is usually rapid but may occasionally be delayed for 12-24 hours. Ingestion of concentrated ammonia solutions (e.g., > 5%) may cause serious corrosive injury to the esophagus and stomach.

POTENTIAL FOR SECONDARY CONTAMINATION:

Small amounts of ammonia vapor can be trapped in clothing after an overwhelming exposure but are usually not sufficient to create a hazard for health care personnel away from the scene. However, clothing which has become soaked with concentrated liquid ammonia may be corrosive to rescuers. Once the victim has been stripped and flushed with water, there is no significant risk of secondary contamination.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir device or manually triggered oxygen powered breathing device, if possible and practical.

3. If clothing has been soaked by liquid ammonia, remove and double-bag. Flush skin with water spray for 1 - 2 minutes. Remove contacts and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate ABCs (airway, breathing, and circulation). Watch for signs of airway closure and laryngeal edema, such as hoarseness, stridor, or retractions.

3. Administer oxygen by mask. Bronchodilators may be helpful for wheezing. Intubate if patient manifests severe respiratory distress from pulmonary edema or upper airway swelling. Obtain arterial blood gases and chest x-ray if respiratory distress is present. If respiratory distress is present or if exposed to low-solubility gases such as nitrogen oxides, admit and observe 24 to 48 hours for possible delayed onset of pulmonary edema. Severe upper airway edema may necessitate endotracheal intubation or cricothyrotomy.

4. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victims with wheezing.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

6. Victims with minimal or quickly resolving symptoms after brief inhalation exposure probably do not require immediate evaluation in the emergency department.

7. Ingestion: DO NOT induce vomiting. Immediately dilute with 1 glass of water or milk.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation). Watch for signs of airway closure and laryngeal edema, such as hoarseness, stridor, or retractions. Severe upper airway edema may necessitate endotracheal intubation or cricothyrotomy.

3. Provide 02 by mask. Intubate if patient manifests severe respiratory distress, from pulmonary edema or upper airway swelling. Obtain arterial blood gases and chest x-ray if respiratory distress is present. If severe respiratory distress is present, admit and observe for 24 hours for delayed-onset pulmonary edema.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 15 to 30 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. Remove and double-bag clothing if not already done. Wash skin copiously with water.

6. Cardiac monitor; l2-lead EKG.

7. Advise that full recovery is generally the rule, but cases of chronic airways disease have been reported following severe exposures.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date revised: 7/31/90

ARSINE GAS

FORMS:

Gas, may be generated in metal ore processing and electronic component manufacturing.

BACKGROUND:

Arsine (AsH_3) is an extremely toxic and nearly odorless gas (it has a slight odor of garlic). It is used widely in the microelectronics industry and occasionally occurs as a by-product in metallurgy and pesticide manufacturing. Arsine's effects are quite distinct from other arsenic compounds; even in very small quantities, inhaled arsine produces acute hemolysis (rupture of red blood cells), which can result in cardiac decompensation due to anemia, or renal failure due to massive kidney deposition of hemoglobin. Symptoms may be delayed for 2-24 hours, and include weakness, abdominal and flank pain, brown urine, and jaundice. Massive acute exposure appears capable of causing immediate death by an unknown mechanism.

POTENTIAL FOR SECONDARY CONTAMINATION:

Very small amounts of arsine can be trapped in a victim's clothing after an overwhelming exposure. but are not usually sufficient to create a hazard for health care personnel away from the scene.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. If gas is likely to be trapped in clothing (i.e., significant exposure in an enclosed area), remove and double-bag clothing. Flush skin with water spray for 1 - 2 minutes.

ARSINE GAS

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing and circulation). Re-evaluate airway, intubate the trachea if victim has developed severe respiratory distress. Administer supplemental high-flow oxygen by mask. Attach cardiac monitor.

3. Checking the color of a recently voided urine specimen may be useful for screening in a mass casualty incident involving exposure to arsine. With massive hemolysis the urine may appear dark orange, red or brown. However, be aware that signs of hemolysis may be delayed for several hours after exposure.

4. If the urine is grossly dark brown, suggesting hemolysis, then administer IV (normal saline) fluid bolus, 500-1000 cc, en route to hospital.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain Iv tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Provide 02 by mask.

4. Monitor cardiac rhythm; obtain l2-lead EKG.

5. Laboratory Tests: Perform urine dipstick for occult blood and hemoglobin. Send for CBC, plasma free hemoglobin PFHgb), urine hemoglobin, platelets, electrolytes, BUN and/or creatinine, bilirubin, blood type and screen, and other laboratory tests as appropriate. Urinary arsenic levels may be elevated for a few weeks after exposure.

6. If there is evidence of acute hemolysis, alkalinize urine with sodium bicarbonate, 50-100 mEq added to 1 (one) liter of 5% dextrose administered IV at a rate to maintain urine output at 2-3 cc/kg/hr. Consider furosemide or mannitol. Follow electrolytes. Follow BUN, creatinine and fluid status closely because renal failure may result in acute fluid overload.

7. If PFHgb exceeds *1.5* gm/dl, there has been a significant rapid drop in hematocrit (e.g., from40 to 30 without other explanation) or there are other indications of intravascular hemolysis (severe abdominal pain, jaundice, shock), consider exchange transfusion after consultation with a medical toxicologist. Prepare for dialysis in the event of renal failure. Shock may occur and should be treated appropriately.

NOTE: BAL and other chelating agents are not effective for arsine exposure. Arsine does not produce the classical symptoms of arsenic poisoning.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 3/13/89

ASBESTOS

FORMS:

Dust and Microscopic fibers.

BACKGROUND:

Asbestos is the name for a group of naturally occurring silicate fibers used in a variety of products such as heat resistant materials, construction materials, insulation, and brake pad linings. Inhalation of asbestos does not produce acute illness, but chronic exposure may lead to chronic lung disease, lung cancer, and other cancers, especially in smokers. The fibers that cause lung disease are microscopic. The most common hazmat circumstances resulting in asbestos exposure in fire fighters is during "overhaul" after a structural fire. A single exposure to a small amount of airborne asbestos is not likely to result in acute or chronic disease. As with any dust, asbestos may cause transient airway irritation which may require medical evaluation. The asymptomatic patient does not require emergency department evaluation.

POTENTIAL FOR SECONDARY CONTAMINATION:

The potential for secondary contamination depends on the circumstances. If the material is wetted down by flushing with water, and grossly contaminated clothing is removed, there is very little risk of secondary contamination. Even wetting down dusted clothing without removing it limits the air dispersion of asbestos fibers.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing, gloves, and mask.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir device or manually triggered oxygen powered breathing device, if possible and practical.

3. Flush the victim with water spray if visible contamination has occurred. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and mask. Activate basic decontamination protocol (see Section Iv, p.20).

If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing and circulation). As with any other dust, asbestos may irritate the airways. If so, re-evaluate the airway and need for assisted ventilation. Administer supplemental oxygen.

3. Aerosolized bronchodilators (such as metaproterenol) may be helpful for victims with wheezing.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain Iv tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

5. Victims who are asymptomatic do not require further evaluation. However, those with persistent cough or wheezing should receive medical attention.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and mask. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. In patients with persistent wheezing, administer aerosolized bronchodilators (such as metaproterenol). Obtain arterial blood gases and chest x-ray.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

CARBON MONOXIDE

FORMS:

Gas.

BACKGROUND:

Carbon monoxide (CO) is a colorless, odorless gas. It is a common product of combustion of any organic material and is a major toxic component in cases of smoke inhalation. Carbon monoxide causes poisoning by interfering with the binding of oxygen to hemoglobin in the blood, myoglobin in heart and muscle tissue, and possibly by interfering with oxygen utilization in the cell. Symptoms of progressively worse exposure include, in order, headache, dizziness, giddiness, tinnitus, nausea, muscle weakness, chest pain, dyspnea, syncope, seizures, and coma. Cherry-red skin coloration is not commonly seen (except post-mortem) and should not be relied upon for diagnosis. The half-life of CO in the blood is from 5 to 9 hours when the victim is breathing room air, compared to 60-90 minutes when breathing 100% oxygen.

POTENTIAL FOR SECONDARY CONTAMINATION:

Very small amounts of CO can be trapped in a victim's clothing after an overwhelming exposure, but are not sufficient to create a hazard for health care personnel away from the scene. Decontamination is not required.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus. Skin protection is not necessary. If only CO poisoning is involved, no decontamination is required.

2. Quickly evaluate ABCs, spine stabilization (if trauma suspected), establish airway and breathing, and administer 100% oxygen by tight-fitting mask, preferably with oxygen reservoir (non-rebreather).

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing and circulation). Re-evaluate airway, intubate the trachea if victim is unconscious or has developed severe respiratory distress. Administer 100% oxygen by tight-fitting mask. Attach cardiac monitor.

3. Support BP, if needed, with IV crystalloid solutions and/or dopamine.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irritation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section m, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Provide 100% 0_2 by a tight-fitting mask or endotracheal tube, preferably with oxygen reservoir.

4. Monitor cardiac rhythm, and obtain l2-lead EKG. Watch for is chemic changes.

5. Laboratory tests - Send for carboxyhemoglobin level (COHb), arterial blood gases, Hct, electrolytes, and other tests as appropriate. Pulse oximetry is not reliable and may indicate falsely normal oxygen saturation.

6. Treat cerebral edema with fluid restriction, hyperventilation, and/or mannitol.

7. Admit to the hospital if any of the following are present:

   a. Mental status changes are present or were present.

   b. COHb > 25%.

C. COHb > 15% in a patient with coronary disease, or current symptoms suggestive of coronary disease.

d. Any EKG change thought to be acute, particularly ST segment depression, regardless of COHb level.

e. Metabolic acidosis or disordered thermoregulation.

f. Patient is pregnant and symptomatic or has COHb > 10%.

NOTE: Cherry red color is usually a post-mortem finding and should not be relied on for diagnosis.

8. A hyperbaric chamber may be helpful if the CO.Hb level is > 40%, the patient has an altered level of consciousness, or the patient does not rapidly respond to 100% 0_2. Consultation with a medical toxicologist is advised. Speed in instituting therapy is very important, and anticipation of hyperbaric oxygen treatment should not delay intubation and the delivery of 100% 02. The use of HBO is controversial and the risk of complications during transport may outweigh the benefits if the chamber is not near by.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

CHLORINE GAS

FORMS:

Gas (anhydrous) or liquid (aqueous chlorine usually in the form of hypochlorite, variable concentrations). The liquid hypochlorite solutions are very unstable and react with acids to release chlorine gas.

NOTE: Liquified compressed gas may produce cryogenic (freezing) hazard as it is released into the atmosphere.

BACKGROUND:

Chlorine is a highly irritating gas which rapidly forms hydrochloric acid after contact with moist mucous membranes in the upper airway and in the lungs. Symptoms occur rapidly and provide good warning properties for exposure. Low concentrations produce eye, nose and throat irritation. Higher concentrations produce cough, wheezing, choking, chemical pneumonitis, or pulmonary edema. Ingestion of concentrated hypochlorite solutions can cause serious corrosive esophageal or stomach injury.

POTENTIAL FOR SECONDARY CONTAMINATION:

Small amounts of chlorine gas can be trapped in clothing after an overwhelming exposure but are not usually sufficient to create a hazard for health care personnel away from the scene. However, clothing which has become soaked with concentrated hypochlorite solution may be corrosive to rescuers and may off-gas chlorine. Once the victim has been stripped and flushed with water, there is no significant risk of secondary contamination. Decontamination is not necessary after simple inhalation exposure.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3 If clothing has been soaked by hypochlorite solution, remove and double-bag. Flush skin with water spray for 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p. 18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim has developed severe respiratory distress due to upper airway swelling or pulmonary edema. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victims with wheezing.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-30 minutes or until symptoms of pain or irrigation have resolved.

5. Victims with minimal or quickly resolving symptoms probably do not require immediate evaluation in the emergency department. Those with persistent cough, wheezing, or altered mental status should receive urgent medical evaluation.

6. Ingestion: DO NOT induce vomiting. Immediately dilute with I glass of water or milk.

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained. don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Provide 0_2 by mask. Intubation may be required for severe respiratory distress.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain Iv tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. Monitor cardiac rhythm if clinically indicated.

6. Obtain chest x-ray, arterial blood gases. Obtain other laboratory tests as appropriate.

7. Observe 6-12 hours for delayed onset pulmonary edema for symptomatic patients.

8. Advise that full recovery is generally expected, but may take several months. Cases of chronic airways disease have been reported following severe exposure.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

CYANIDE

FORMS:

Gas (hydrogen cyanide), liquid (solutions of cyanide salts), and solid (cyanide salts). Hydrogen cyanide gas may be formed when acid is added to a cyanide salt or a nitrile.

BACKGROUND:

Cyanide (CN) is an extremely toxic compound which is widely used in industry in a variety of forms (gas, liquid, solid). CN gas (HCN) is a major toxic component in cases of smoke inhalation. CN produces toxicity by interfering with cellular oxygen utilization. Symptoms and signs include headache, dizziness, vomiting, tachypnea, tachycardia, and coma. There may be a distinctive odor ("bitter almonds") on the victim's clothing or breath. Death can occur within minutes of exposure. If exposure is by inhalation of CN gas, peak toxic effects are seen within minutes, but after ingestion of a CN salt, effects may be delayed until the CN is absorbed from the stomach.

POTENTIAL FOR SECONDARY CONTAMINATION:

If the exposure was by inhalation of HCN gas, even though there may be small amounts of gas trapped in clothing after an overwhelming exposure, this is not usually sufficient to create a hazard for health care personnel away from the scene. The risk of secondary contamination to rescuers is greater if there are large amounts of liquid or solid material on the victim's clothing or skin.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. If clothing has been soaked by solid or liquid CN-containing material, remove and double-bag clothing. Flush skin with water spray for 1-2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

CYANIDE

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. Consider use of sodium thiosulfate IV. *This is not within current California EMT-II or EMT-P scope of practice.*

4. Ingestion: If available, administer activated charcoal 60-100 gm orally. Immediate induction of emesis with ipecac is probably not as effective.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Of note, liquid chlorine bleach will decontaminate contaminated equipment and should be used when laundering contaminated clothing. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Administer 0_2 by mask or endotracheal tube. Reducing the potential for chemical exposure from any form of mouth-to-mouth resuscitation, including use of pocket one-way valve mouth-to-mouth resuscitation, should be carefully considered.

4. Monitor cardiac rhythm, and obtain l2-lead EKG.

5. Laboratory Tests: Serum thiocyanate, blood cyanide, CBC, electrolytes, arterial blood gases, lactate, and other laboratory tests as appropriate. **Appropriate treatment should not be delayed in test results.**

6. Respiratory Exposure: If the patient arrives asymptomatic, probably no treatment will be needed. If the patient is ill, begin (7) below.

   Ingestion or Skin Contact: ER staff should be ready to initiate therapy immediately, regardless of the presence of symptoms on arrival. Be prepared to intubate quickly.

7. In the symptomatic patient with a significant exposure, administer treatment in the following order (use Cyanide Antidote Kit):

   a. Amyl nitrite-break pearls into gauze sponge and hold under patient's nose or Ambu intake valve for 15 to 30 seconds/minute, until sodium nitrite solution is ready.

   b. Sodium nitrite ($NaNO_2$) 3% IV solution:

      Adults: 10 ml at 2.5 to 5 ml/minute, or 0.35 ml/kg.

      Children: 0.2 ml/kg, not to exceed 10 ml.

   c. Through the same IV line in (13) above, give sodium thiosulfate ($Na_2S_2O_3$),25%.

      Adults: 12.5 gm *(50* cc of *25%* solution).

      Children: 1.6 to 1.8 ml/kg of a 25% solution, up to 50 cc.

   d. Repeat antidote at 50% of initial dose if symptoms persist after 20 minutes. If symptoms worsen after treatment, consider nitrite toxicity causing methemoglobinemia greater than 25%, up to 50 cc.

   WARNING: Methemoglobinemia may be particularly dangerous in children. Also, be extremely cautious in treating with nitrite if there has also been carbon monoxide exposure. The same dose of nitrites can cause excessive methemoglobinemia. Normal therapeutic amounts of methemoglobinemia in the face of carbon monoxide poisoning can be a problem and should be closely watched.

8. If ingestion is suspected, perform gastric lavage and administer activated charcoal.

9. Admit and observe 2448 hours. Watch for metabolic acidosis; treat with sodium bicarbonate if needed. Watch for hypotension; treat with fluid and pressors if needed. Hyperbaric oxygen may be helpful in displacing cyanide ion from cellular enzymes.

10. Hyperbaric oxygen may be indicated for victims of smoke inhalation who have had both cyanide and carbon monoxide exposures and who do not respond to treatment.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

ETHYLENE OXIDE (ETO, EO)

FORMS:

Liquid and gas. Used to produce ethylene glycol for anti-freeze products; sterilize food; fumigate books, dental, pharmaceutical, medical and scientific equipment and supplies; and, in health care facilities, to gas sterilize equipment.

ETO in its pure form is extremely flammable, explosive and toxic. Inhalation or direct contact by dermal exposure should be avoided. ETO is a colorless gas with an ether-like (sweetish) odor that is readily detected at first; however, continued exposure results in olfactory fatigue.

BACKGROUND:

ETO in a gaseous form can enter the body through the lungs, skin or eyes. Short-term exposure can cause irritation to eyes, nose, throat and lungs. Even brief skin contact with liquid ETO can cause edema and erythema with progression to blister formation in 6-12 hours.

Acute exposure to several hundred ppm can lead to nausea, vomiting, olfactory fatigue, nervous system injury and respiratory distress. Prolonged breathing of these high concentrations can cause dizziness, weakness, chest pain and pulmonary edema. Symptoms after mild exposure usually clear within a few hours. However, onset of pulmonary edema may be delayed up to 24 hours. Symptoms usually clear without residual within hours after termination of exposure. The material is a known sensitizer and has produced allergic and anaphylactic reactions. Peripheral neuropathy has been infrequently observed.

Cancer and adverse reproductive effects, including spontaneous abortions among female hospital workers, have been reported in various studies but long-term effects are not completely known.

POTENTIAL FOR SECONDARY CONTAMINATION:

Following inhalation exposure to ETO gas **ONLY**, the potential for secondary contamination is low and decontamination is not required. Liquid formulations of ETO may be absorbed by clothing, shoes, and boots from which it can off-gas. Remove and air out grossly contaminated clothing, shoes and boots.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove exposed individual from source of contamination. Remove grossly contaminated clothing, shoes and boots and air out. Flush the skin with water spray vigorously for at least 15 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Quickly establish airway, and stabilize C-spine if trauma if suspected. Administer supplemental oxygen as soon as it is practical.

3. Give bronchodilators if significant wheezing is present.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain Iv tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

5. Victims with minimal or quickly evolving symptoms may not require hospital emergency department evaluation.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs. Provide supplemental oxygen as needed. Administer aerosolized bronchodilators for wheezing.

3. Arterial blood gases, chest x-ray, and pulmonary function studies may be helpful to assess patient's pulmonary status.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. Clinical decisions about period of observation should be guided by exposure history and presenting signs and symptoms. Experience has shown that most victims with exposure to 12% ETO in Freon (a common mixture for gas sterilization equipment) do not develop pulmonary problems. If after 4-6 hours the patient remains a symptomatic and baseline pulmonary studies are normal, the likelihood of sudden pulmonary edema is very low. On the other hand, victims with significant exposure who ar symptomatic should be admitted and observed for pulmonary edema which may have a delayed onset of up to 24 hours.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised 7/31/90

FORMALDEHYDE

FORMS:

Formaldehyde is a gas. Formalin is an aqueous solution, usually about 35% formaldehyde, that may also contain 5-15% methanol.

BACKGROUND:

Formaldehyde is a gas with a pungent odor used widely in paper processing, wood products, urea-form insulation, carpeting, furniture, and fabrics. It is a highly water soluble gas with toxicity beginning at very low levels of exposure. Inhalation of high concentrations can cause severe coughing, wheezing, and non-cardiogenic pulmonary edema. Skin and eye irritation may occur, and direct contact with concentrated aqueous solutions can cause burns.

Ingestion of formalin may cause corrosive injury of the esophagus and stomach, and absorption of the formaldehyde and methanol can cause metabolic acidosis and blindness due to metabolism to formic acid.

Formaldehyde is a known animal and suspected human carcinogen.

POTENTIAL FOR SECONDARY CONTAMINATION:

Victims who have inhaled formaldehyde gas are not contaminating to others and do not require decontamination. Victims whose clothing or skin is soaked with formalin solution may off-gas formalin and methanol, but once the clothing has been removed and the skin flushed with water, there is no significant risk of secondary contamination of rescuers outside of the hot zone, even if the characteristic residual odor of formaldehyde is still detectable.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. If the victim has been soaked by formalin solution, remove and double bag clothing and flush skin for 1-2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Reevaluate the airway, intubating the trachea if victim has developed severe respiratory distress due to upper airway swelling or pulmonary edema. Continue to provide supplemental oxygen. Attach cardiac monitor.

3. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victims with wheezing.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

5. Victims with minimal or quickly resolving symptoms of eye and throat irritation do not require immediate evaluation in the emergency department. Those with persistent cough, wheezing, or altered mental status should receive urgent medical evaluation.

6. Ingestion: DO NOT induce vomiting. Immediately dilute with 1 glass of water or milk.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Obtain arterial blood gases, chest x-ray, and electrocardiogram in seriously symptomatic patients.

4. Provide supplemental oxygen. Intubation and assisted ventilation may be required for severe pulmonary edema or if the patient is comatose or convulsing. Pulmonary edema may be delayed for up to 6-12 hours, so patients with serious exposures should have prolonged observation.

5. Skin and eye exposures: Irrigate exposed skin if not already performed. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

6. Formalin ingestion: Dilute with oral water or milk. Perform cautious gastric lavage using a small flexible gastric tube. If corrosive injury to GI tract is suspected, obtain consultation with gastroenterologist or surgeon for possible endoscopy. Also, obtain serum methanol, osmolar gap, and (if available) formate levels to evaluate possible systemic poisoning. Consult with a poison control center.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

HALOGENATED HYDROCARBON SOLVENTS, INCLUDING CHLORINATED SOLVENTS, DEGREASERS, PAINT STRIPPERS, AND CHLOROFLUOROCARBONS

FORMS:

Most halogenated hydrocarbon solvents are liquid at room temperature. Gas (vapor) can be released from open containers or spilled material, and especially from solvents that have a high vapor pressure.

Halogenated hydrocarbon solvents are widely used in industry because, for the most part, they present a reduced risk of fire or explosion when compared to other commonly available solvents. However, when exposed to heat or fire, they can break down into irritant gases, including hydrochloric acid, hydrofluoric acid, or phosgene.

BACKGROUND:

These substances are commonly used in industry for cleaning and degreasing electronic parts or metal or other surfaces, for dry cleaning, and for refrigeration. Among the halogenated hydrocarbon solvents are trichloroethylene, perchloroethylene ("perc"), methylene chloride (dichloromethane), 1,1,1-trichloromethane (methyl chloroform), Freons, Halons and other chlorofluorocarbons. Methylene chloride deserves special attention because it is metabolized to carbon monoxide and is corrosive to skin and mucous membranes. Odor varies by compound and in general is not a good warning property.

These solvents are well absorbed through skin or the lungs. They tend to be excreted rapidly, largely through exhalation, usually within a period of 15 minutes to a few hours. Acute high level exposures can produce slight to moderate skin or mucous membrane irritation, and narcosis (a sensation of giddiness or disorientation which, if extremely pronounced, may lead to unconsciousness and/or respiratory depression). Sensitization of the myocardium following high-level exposures may result in cardiac arrhythmias. Liver and kidney injury may also occur. Lower levels of exposure are not typically very dangerous but may cause headache, nausea, and dizziness. A significant concern for many of these agents is their high vapor pressure which, in confined or poorly ventilated spaces, can displace oxygen resulting in life threatening hypoxemia.

Solvents may be absorbed by ingestion with symptoms similar to those associated with inhalation. Aspiration into the lungs may cause severe chemical pneumonitis. These patients usually have coughing, tachypnea and other symptoms of respiratory distress.

Exposures limited to brief skin contact do not produce a significant acute health risk although most of these agents can cause a defatting effect on the skin and some (e.g., methylene chloride) can cause severe dermatitis. Some of the chlorinated solvents are known or suspected carcinogens.

HALOGENATED HYDROCARBON SOLVENTS, INCLUDING CHLORINATED SOLVENTS, DEGREASERS, PAINT STRIPPERS, AND CHLOROFLUOROCARB ONS

POTENTIAL FOR SECONDARY CONTAMINATION:

If the victim was exposed only to solvent vapors, there is no risk of secondary contamination and decontamination is not necessary. On the other hand, if the victim's clothing, skin or hair is soaked with solvent, rescuers can be contaminated by direct contact or, more importantly, by inhalation of off-gassing vapors. Rescuers should avoid skin contact with these solvents or respiratory exposure in a poorly ventilated area. Decontaminated victims exhaling these products through the lungs could produce transient minor symptoms in transporting personnel.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should carefully evaluate risks. If appropriate, rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir if possible and practical.

   Note: Solvent exposure alone is rarely the cause of loss of consciousness, except in cases of cardiac arrythmia or in cases of overwhelming exposure in a confined space.

3. If the victim's skin is grossly contaminated with liquid material, remove and double-bag soaked clothing and flush skin with water spray for 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and if liquid contaminant is present, responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p. 20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Reevaluate and manage airway. Continue to provide high-flow oxygen until respiratory distress and/or altered consciousness subside. Monitor cardiac rhythm. Be alert for cardiac arrhythmias.

   Note: Solvent exposure alone is rarely the cause of loss of consciousness, except in cases of cardiac arrythmia or in cases of overwhelming exposure in a confined space.

3. Provide high flow oxygen. Avoid epinephrine, bronchodilators, terbutaline, and other betaadrenergic agents, if possible, because they may induce fatal arrhythmias in the myocardium sensitized by halogenated hydrocarbons.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

   If the patient complains of skin irritation, flush affected skin areas with copious amounts of water or saline for 15 minutes. Washing with soap and water may help to remove residual solvent.

5. Victims with minimal or quickly resolving symptoms probably do not require immediate evaluation in the emergency department.

6. **Ingestion: DO NOT induce vomiting.** Immediately dilute with 1 glass of water and give activated charcoal if available.

MANAGEMENT IN THE HOSPITAL:

The principal risks for severely exposed patients are coma and cardiac arrhythmias (following inhalation or ingestion), and chemical pneumonitis due to solvent aspiration following ingestion. Arrhythmias may be delayed for up to 12 to 24 hours after exposure. However, these risks are appreciable only if the inhalation victim has initially displayed significant symptoms of dizziness, disorientation, or respiratory distress. Patients with significant methylene chloride exposure may develop carbon monoxide toxicity in addition to the other effects of the solvent.

1. If victim is NOT decontaminated and if liquid contaminant is present, and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p. 20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18 and Table 7, p.32).

Some solvents may cause latex gloves to disintegrate. Chemically specific protective gloves should be worn. At a minimum, health care personnel should double glove and repeatedly check and change them, and wear goggles and gowns or other protective clothing until decontamination is completed.

2. Evaluate and support ABCs.

3. Administer oxygen by mask and maintain patient airway. Intubate and assist ventilation if necessary. Obtain arterial blood gases and chest x-ray if respiratory distress is present.

4. For patients with significant methylene chloride exposure and altered consciousness or severe respiratory distress, obtain a carboxyhemoglobin level. Administer 100% oxygen and refer to treatment protocol for carbon monoxide (see p. C. 1.1).

5. Monitor cardiac rhythm, obtain 12-lead EKG, watch for cardiac arrhythmias which may occur in the first 24 hours after significant exposure. Avoid epinephrine, bronchodilators, and other beta-adrenergic agents if possible, because of the risk of inducing arrhythmias.

6. Remove contact lenses and irrigate the eyes copiously with saline or water for at least 15 to 20 minutes if eye irritation is present. Examine eyes using a slit-lamp and/or fluorescein strips, if corneal injury is suspected.

7. If ingestion is suspected, particularly in the presence of altered consciousness perform gastric lavage after protecting the airway, and administer activated charcoal. Observe for at least 6 hours for onset of symptoms of pulmonary aspiration chemical pneumonia. If suspected, obtain chest x-ray and arterial blood gases.

8. Obtain routine laboratory baseline tests to include hepatic transaminase and kidney function tests.

9. If corrosive injury to the GI tract is suspected, obtain consultation with a gastroenterologist or surgeon for possible endoscopy.

HALOGENATED HYDROCARBON SOLVENTS, INCLUDING CHLORINATED SOLVENTS, DEGREASERS, PAINT STRIPPERS, AND CHLOROFLUOROCARBONS

10. Victims who have lost consciousness, or who may have ingested a quantity of solvent or who have an infiltrate on initial chest x-ray should be observed for at least 12 to 24 hours for aspiration pneumonia, and monitored for 24 hours for cardiac arrhythmias.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

HYDROFLUORIC ACID

FORMS:

Gas, liquid (variable concentrations), and fluoride salts in the presence of acids may generate toxic quantities of hydrogen fluoride.

BACKGROUND;

Hydrofluoric acid (HF) produces toxicity quite distinct from other mineral acids. The “acid” moiety (hydrogen ion) is relatively unimportant, producing little burning sensation on initial contact. In contrast, the highly toxic fluoride ion has the ability to penetrate tissue and produce indolent ulceration or bony destruction. Solutions of greater than 10-20% are particularly destructive. Solutions of greater than 60% concentration can cause significant respiratory exposures. as well. Inhalation may cause eye, nose and~throat irritation, cough, tracheobronchitis, and delayed onset pulmonary edema. Ingestion may produce severe corrosive burns of the esophagus and stomach. Systemic absorption of fluoride (i.e., from a burn or after ingestion) may result in severe hypocalcemia, hypomagnesemia, and hyperkalemia, resulting in tetany and cardiac arrest.

POTENTIAL FOR SECONDARY CONTAMINATION:

Until the soaked clothing has been removed and the affected body part has been flushed, there is some hazard to treating health care personnel, depending on the concentration. Following basic decontamination, there is usually no significant risk of secondary contamination.

PATIENT MANAGEMENT IN THE HOT ZONE I DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double-hag clothing. Flush skin with water spray for I - 2 minutes with water spray. Remove contact lenses and irrigate exposed eyes if symptomatic.

HYDROFLUORIC ACID

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

   If available, magnesium sulfate solution (Epsom salt) or lime water (calcium hydroxide) are effective irrigating solutions. Also, magnesium-containing antacids such a Maalox (R) or Mylanta(R) can be applied topically.

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress due to upper airway swelling or pulmonary edema. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. Provide continuous cardiac monitoring to look for QT interval prolongation which is an early sign of hypocalcemia.

   a. Treat tetany or cardiac arrest with IV 5 cc calcium chloride 10% (or 10 cc calcium gluconate 10%). *(Calcium gluconate is not within current California EMT-II or EMT-P scope of practice.)*

   b. Consider prophylactic calcium for victims with high concentration (10-20%) exposure to greater than 3-5% body surface area.

4. **Ingestion: DO NOT induce vomiting.** Immediately dilute with 1 glass of water or milk. If available, give magnesium or calcium-containing antacid (both will bind fluoride).

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

HYDROFLUORIC ACID

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section m, p.18 and Table 7, p.32).

   If not decontaminated before arrival, remove and double bag clothing; wash skin with soap and water. Continue to irrigate copiously. HF will continue to leach from exposed skin and tissues for at least 15 minutes.

2. Evaluate and support ABCs (airway, breathing, and circulation).

DILUTION IS BETTER THAN NEUTRALIZATION IN THE FIRST CRITICAL MINUTES!!

3. Evaluate the extent of skin exposure and following irrigation, administer additional treatment:

a. If the HF concentration was > 20% or is unknown or exposure was prolonged:

(1) Infiltrate affected area with 10% calcium gluconate, using a 25-30 gauge needle and multiple injections of *0.5* mi per square centimeter, taking care to prevent damaging underlying structures. Pain should resolve with the injection.

DO NOT USE calcium chloride, which is extremely painful and may further injure tissues.

(a) Repeat after several hours if pain recurs.

(b) Avoid local anesthetics, which may mask~clinical findings.

(c) Limit injection to 0.5 mi per phalanx.

(2) Remove blisters and debride underlying tissues, as these may contain HF.

(3) Remove nails if evidence of periungual or ungual tissue involvement. Use a regional anesthesia proximal to the site of injury.

b. If the HF concentration was < 20% and the duration of exposure was brief (less than a few minutes), administer calcium gluconate gel (2.5%) or 30% - 50% magnesium sulfate solution by massage or soaks to affected area for at least 30 minutes. This treatment binds HF as the insoluble CaF_2 or MgF_2 salts. If pain persists, go to step 3A. If more than an hour or two has elapsed since the time of initial decontamination topical soaks are not as effective.

c. For extremity burns where topical agents are ineffective in relieving pain or as alternative modality to fingernail removal, an intraarterial injection of calcium gluconate may be effective. Obtain consultation with a medical toxicologist.

4. Ingestion - treat as severely corrosive agent. Consider endoscopy to evaluate extent of damage. Consider lavage with calcium containing solution.

5. Additional steps for all patients:

   a. Admit to burn unit or intensive care unit if the total extent of the burn is greater than 2% - 3% BSA, or if there is significant respiratory distress.

   b. Observe for hypocalcemia, hypercalcemia, and other system effects if HF concentration was greater than 20% or if there was prolonged contact with a significant percent of BSA (2% to 3% or more).

   c. Provide continuous cardiac monitoring to look for QT prolongation which may be early sign of hypocalcemia. Consider giving IV calcium prophylactically for high concentration exposures to greater than 5% BSA or for dilute exposures to larger surface areas.

   d. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury. Administer 1 gram (10 ml) 10% calcium gluconate IV if immediate serum calcium levels are not available and exposure was extensive-greater than 5% BSA**.**

6. Establish baseline and serial electrolytes, Ca, Mg. Follow blood gases in the event of respiratory exposure.

7. Obtain 12-lead EKG; monitor cardiac rhythm.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

HYDROGEN SULFIDE, SULFIDES & MERCAPTANS

FORMS:

Gas (hydrogen sulfide, methyl & short-chain alkyl mercaptans) and liquid (other mercaptans).

BACKGROUND:

Hydrogen sulfide (H_2S) is a highly toxic gas with an odor of rotten eggs at low concentrations. At higher concentrations olfactory fatigue rapidly occurs, making odor a poor warning symptom of danger. Mercaptans are sulfur-containing, highly odorous compounds. All of these compounds are direct irritants, but their major toxicity is due to interference with cellular oxygen utilization. Low-level exposures produce irritation of the eyes, nose and throat, cough, headache, nausea, and dizziness. Higher exposures can cause syncope, seizures, coma, tracheobronchitis, and pulmonary edema (which may occur up to 48-72 hours later). Death may occur within minutes of acute massive exposure.

POTENTIAL FOR SECONDARY CONTAMINATION:

Small amounts of H_2S gas can be trapped in clothing after an overwhelming exposure but are not usually sufficient to create a hazard for health care personnel away from the scene. However, clothing which has become soaked with concentrated liquid sulfide solutions or mercaptans may pose a risk to rescuers. Once the victim has been stripped and flushed with water, there is no significant risk of secondary contamination.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves tinder the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing. and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. If clothing has been soaked by liquid sulfide or mercaptan-containing material, remove and double-bag clothing and flush skin for with water spray 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

HYDROGEN SULFIDE, SULFIDES & MERCAPTANS

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress due to upper airway swelling or pulmonary edema. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. Ingestion of liquid sulfides: **DO NOT INDUCE EMESIS**. If available, administer activated charcoal 60-100 gm orally.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

5. Victims with minimal or quickly resolving symptoms probably do not require immediate emergency department evaluation.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center. Odor will provide a warning about the need for decontamination. *A WELL-VENTILATED AREA WILL BE VERY HELPFUL.*

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Provide 0_2 by mask, if the victim has respiratory distress or altered mental status.

4. Irrigate the eyes with saline or water if there is eye irritation. If the patient is severely affected with coma or cardiovascular collapse, administer treatment in the following order, using the nitrite portion of the Cyanide Antidote Kit:

   a. Amyl nitrite: Break pearls into gauze sponge and hold under patient's nose or Ambu intake valve for 15 to 30 seconds/minute, until sodium nitrite solution is ready.

   b. Sodium nitrite ($NaNO_2$) 3% IV solution:

      Adults: 10 mi at 2.5 to 5 mi/minute, or 0.35 mi/kg.

      Children: 0.2 mi/kg, not to exceed 10 mi.

   c. Sodium thiosulfate is *not* effective for H_2S exposure.

   d. Repeat antidote at 50% of initial dose if symptoms persist after 20 minutes. If symptoms worsen after treatment, consider the possibility of nitrite toxicity causing methemoglobinemia greater than 25%.

   e. Continue 0_2 for at least 2 hours afterward.

5. Monitor cardiac rhythm and obtain l2-lead EKG. Tachyarrhythmias may occur.

6. Laboratory tests: CBC, electrolytes, creatinine and/or BUN, blood gases, liver function studies, urinalysis, and other laboratory tests as appropriate.

7. If symptoms are mild, including eye and throat irritation, headache, nausea, or dizziness, supportive care will suffice.

8. In severe cases, observe for delayed onset pulmonary edema and liver toxicity.

9. Hyperbaric oxygen may be helpful, although the medical literature on this point is controversial.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 7/31/90

METHYL BROMIDE

FORMS:

Methyl bromide is an odorless and colorless gas with poor warning properties. At low temperatures it may liquefy. When used as a fumigant, methyl bromide is usually mixed with a warning agent, such as chloropicrin, or tear gas.

BACKGROUND:

Methyl bromide is widely used in chemical synthesis and as an insecticidal fumigant both in agriculture and for termite eradication in homes and other buildings; it has also been used in refrigeration and in fire extinguishers. When used in fumigation, it is typically applied under a tarp which is draped over the building or plot of land. In such cases, the methyl bromide tends to disperse more rapidly than the warning agent. When first "shot" during fumigation, methyl bromide may liquefy, running down the applicator's skin, clothing and shoes resulting in severe burns if not promptly removed.

Exposure to high concentrations of methyl bromide can produce irritation of the eyes, nose, throat and respiratory tract. Delayed pulmonary edema can occur. Because of the poor warning properties of methyl bromide, significant exposure can occur before the onset of symptoms. Systemic toxicity includes malaise, nausea, vomiting, tremor, seizures, and coma. Chronic neurologic sequelae such as dementia and psychosis have been described. There is very little medical information about chronic health risks associated with low level exposure (i.e., up to 100 ppm in air). Methyl bromide is a suspected carcinogen.

Methyl bromide easily penetrates clothing and some protective gear. Retention of the gas or liquid in clothing or rubber or leather boots can be a source of prolonged percutaneous exposure.

POTENTIAL FOR SECONDARY CONTAMINATION:

Patients exposed only to gaseous methyl bromide are not contaminating to others and do not require decontamination. For victims exposed to liquid methyl bromide, once the clothing has been removed and the skin has been flushed with water there is no significant risk of secondary contamination of rescuers outside of the hot zone. Leather clothing and boots contaminated with liquid methyl bromide should not be reworn; they should be decontaminated or discarded.

METHYL BROMIDE

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double bag clothing and flush skin with water spray for 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If liquid-soaked victim is NOT decontaminated, and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p. 18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). If necessary, establish a patient airway, and provide supplemental oxygen.

3. Treat seizures with diazepam (Valium):

   5-10 mg IV for an adult; and,
   1-2 mg IV for children.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

METHYL BROMIDE

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.32).

2. Evaluate and support ABCs. Provide supplemental oxygen. Intubation and assisted ventilation maybe required for severe pulmonary edema or if the patient is comatose or convulsing.

3. Obtain arterial blood gases, chest x-ray, and electrocardiogram in seriously symptomatic patients.

4. Although in serious exposures most symptoms begin in 4 to 6 hours, a delay of up to 24 hours may occur. Observation for 24 hours should be considered.

5. Treat seizures with diazepam (Valium):

   5-10 mg Iv for adults;
   1-2 mg for children;

   or with Lorazepam:

   24 mg Iv for adults;
   0.1 mg/kg Iv for children;

   and/or other anticonvulsants.

6. Flush the skin with large amounts of water or eye exposures with copious irrigation. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain Iv tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

7. Serum bromide levels may be elevated after serious methyl bromide exposure but do not correlate with severity of illness. However, serum bromide levels greater than 5 mg/dl is an indicator of significant exposure to methyl bromide.

8. Antidotes: There are no proven antidotes, although some toxicologists have suggested use of dimercaprol (BAL) or acetylcysteine (Mucomyst).

9. After serious exposures, delayed onset of pulmonary and neurologic manifestations may occur.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

NITROGEN-CONTAINING COMPOUNDS AND OTHER CHEMICALS CAUSING METHEMOGLOBINEMIA

FORMS:

Gas, liquid and solid. Substances tend to be brown or yellow in color, especially when impure.

BACKGROUND:

A wide variety of nitrogen-containing compounds, including anilines, nitrates and nitrites, aryl amines, and aromatic nitrogen compounds, are potent oxidizing agents which can produce methemoglobinemia. However, not all nitrogen containing compounds produce methemoglobinemia. Methemoglobin is unable to transport oxygen. Patients with methemoglobinemia greater than 15% will appear grey or cyanotic, and their blood will appear chocolate brown. With higher levels signs and symptoms of hypoxia are present, including headache, dizziness, nausea, dyspnea, syncope, seizures, and coma. These methemoglobin-forming compounds may also produce direct systemic effects such as skin or respiratory irritation, vasodilation, hypotension, headache, nausea and CNS depression. Many of the liquid compounds are highly volatile and may be inhaled, and many are well-absorbed through the skin.

POTENTIAL FOR SECONDARY CONTAMINATION:

Depending on the individual compound, these agents may pose a significant health hazard for rescuers and health care personnel. Many are well-absorbed through intact skin. Simple water washing may be insufficient to remove oily compounds.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breath mg apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double-bag clothing. Flush skin with water spray for 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

NITROGEN-CONTAINING COMPOUNDS AND OTHER CHEMICALS CAUSING METHEMOGLOBINEMIA

PREHOSPITAL MANAGEMENT AFTER INITIAL DEC ONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. If victim has not been stripped and flushed, activate basic decontamination protocol (see Section IV above). In addition, wash oily contaminated areas with soap and/or shampoo.

4. Ingestion: If available, administer activated charcoal 60-100 gm orally.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

   Health care personnel should don neoprene gloves *(do not use canvas, cotton, rubber, or latex gloves)* and protective clothing. If the victim's clothing is wet, or dusty material is present, respiratory protection is appropriate. Consult with a knowledgeable authority about appropriate protective clothing.

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. If not decontaminated before arrival, remove and double bag contaminated clothing, and wash skin with soap and water.

4. 0_2 by mask.

5. Monitor cardiac rhythm; obtain 12-lead EKG.

6. The following laboratory tests should be performed: Send methemoglobin (MetHb) level STAT *(MUST be done within 1 hour to be accurate and helpful)*. **Note that waiting for this result may jeopardize the patient.** Chocolate brown blood suggests that significant methemoglobinemia is present.

7. Additional laboratory tests: CBC, electrolytes, BUN and/or creatinine. Obtain other laboratory tests as appropriate.

8. Administer methylene blue if MetHb > 40% or if MetHb is between 25% and 40% AND the patient is symptomatic. Worrisome symptoms include severe headache, disorientation, tachypnea, tachycardia, or other indications of cardiovascular decompensation.

    a. Give methylene blue, 1 % solution (10 mg/ml), 1 to 2 mg/kg Iv over 10 minutes (equivalent to 0.1 to 0.2 mi/kg, or total of about 5 to 20 ml). Observe for elevated BP, nausea, disorientation.

    b. Repeat in 1 hour if cyanosis or severe symptoms persist.

    c. The total dose of methylene blue should not exceed 7 mg/kg.

    d. Continue Oxygen for at least 2 hours following methylene blue administration.

    WARNING:Methylene blue is itself toxic, and may produce disorientation, elevated BP, nausea, diarrhea, and delayed hemolytic anemia.

9. Once the patient is stable, rule out other causes for methemoglobinemia (drug use, G6-PD deficiency, hemoglobinopathies).

10. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

PENTACHLOROPHENOL

FORMS:

Pentachiorophenol is a solid (1)locks, flakes, or pellets), and is often found in liquid solution (5-30% in accompanying organic solvents). Technical grades are dark gray to brown in color. Solid forms are not flammable, but organic solvents maybe flammable. When heated, pentachiorophenol can produce chlorinated dibenzodioxin and dibenzofurans.

Solid pentachlorophenol has a low vapor pressure. At 20' C, the saturated air concentration is *2.5* mg/m^3. This means that the potential for acute poisoning by inhalation alone is very low. Dusts or mists of pentachiorophenol increase the inhalation hazard. The presence of volatile organic solvents, especially in confined or poorly ventilated spaces may also increase the risk of inhalation. Fires may produce smoke laden with pentachlorophenol and its decomposition products.

BACKGROUND:

Pentachlorophenol is a wood preservative with a characteristic and pungent odor. It is a strong irritant; prolonged contact may cause burns to the eyes or skin, and vapors are irritating to the eyes and respiratory tract. Eye and nose irritation are good warning properties of an acute exposure. It is well absorbed by skin contact, inhalation, or ingestion.

Pentachlorophenol intoxication causes uncoupling of oxidative phosphorylation in the cell resulting in increased tissue oxygen demand and generation of excessive heat. Acute poisoning is characterized by profuse sweating and fever in addition. to headache, nausea, vomiting, weakness, metabolic acidosis, restlessness, tachypnea, and tachycardia. Seizures and coma may occur.

In animals, pentachlorophenol causes cancer and adverse effects on fetal development. There is little information about the chemical effects on humans.

POTENTIAL FOR SECONDARY CONTAMINATION:

Pentachlorophenol is well absorbed through the skin, and until contaminated clothing has been removed and all affected areas have been thoroughly washed with soap and water, there is a potential risk of secondary contamination.

PENTACHLOROPHENOL

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and administer high flow supplemental oxygen by bag valve mask with reservoir, as soon as practical.

3 Remove and double bag clothing, activate decontamination protocol (Section IV, p.20) and flush affected skin for several minutes. Remove contact lenses and irrigate exposed eyes if symptomatic. Follow with thorough soap and shampoo wash of exposed skin areas.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

   A second soap or shampoo wash may be indicated for victim with heavy contamination; this may be performed by EMS personnel using plain latex gloves. Remove contact lenses and irrigate exposed eyes with water or saline if symptomatic.

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate the ABCs. Continue to provide supplemental oxygen. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victim with wheezing.

3. Treat seizures with diazepam (Valium):

   5-10 mg IV for an adult; and,
   1-2 mg IV for children.

4. Perform external cooling for patients with obvious hyperthermia, using water spray and fanning.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain Iv tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.23).

2. Evaluate and support ABCs (airway, breathing and circulation). Provide supplemental oxygen. Aerosolized bronchodilators (e.g., metaproterenol) may be helpful for victims with wheezing. Intubation and assisted ventilation may be required for severe respiratory distress or if the patient is comatose or convulsing.

3. Obtain arterial blood gases, chest x-ray, and electrocardiogram in seriously symptomatic patients.

4. Treat seizures with diazepam (Valium):

   5-10 mg Iv adult;
   1-2 mg IV for children;

   or Lorazepam:

   2-4 mg Iv for adults;
   0.1mg/kg IV for children;

   and/or other anticonvulsants.

5. Perform aggressive cooling for patients with hyperthermia, using tepid water spray with fanning, ice water gastric or peritoneal lavage, and/or neuromuscular paralysis. **DO NOT give aspirin.**

6. If the patient complaints of eye irritation, check for presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp to rule out corneal injury.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

PESTICIDES - CARBAMATES

FORMS:

Liquid (usually in solution with xylene or other organic solvent), solid (wettable powder). May be inhaled in an aerosol form or as a component of smoke.

BACKGROUND:

Carbamate pesticides are widely used in home gardening and commercial agriculture. Like organophosphates, they inhibit the enzyme cholinesterase, resulting in buildup of excessive acetyl choline. Unlike organophosphates, the inhibition of cholinesterase is transient and self-limited. Symptoms and signs include hypersalivation, sweating, bronchospasm, abdominal cramps, diarrhea, muscle weakness, small pupils, bradycardia, twitching and seizures. Death is due to respiratory muscle paralysis. Nonspecific symptoms such as upper airway irritation, dizziness, nausea and headache after inhalation exposure may be due to the solvent vehicle (e.g., xylene) and not due to cholinesterase inhibition. Potential toxicity of the solvent vehicle should always be considered.

POTENTIAL FOR SECONDARY CONTAMINATION:

Many carbainates are well absorbed through intact skin, and thus may pose a serious hazard to rescuers or health care personnel. Simple water washing may be insufficient to remove oily compounds.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

I. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves tinder the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double-bag clothing. Flush skin with water spray for I - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PESTICIDES - CARBAMATES

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

   In addition, wash oily contaminated areas with soap and/or shampoo.

2. Evaluate and support ABCs (airway, breathing, and circulation). Re~valuate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. If the victim is symptomatic (e.g., excessive salivation, abdominal cramps, diarrhea, wheezing, sweating, bradycardia), administer atropine 0.5-1.0 mg initially, followed by repeated 1-2 mg doses every 3-5 minutes as needed for severe poisoning (severe bronchospasm or bradycardia).

4. Ingestion: If available, administer activated charcoal 60-100 gm orally.

   DO NOT induce emesis.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section Iv, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

   Shampoo hair and scalp, clean under nails, and in ears.

2. Evaluate and support ABCs (airway, breathing, and circulation). Intubation is occasionally required.

3. Provide 0_2 by mask or endotracheal tube. Obtain and follow blood gases if respiratory distress is present.

4. Monitor cardiac rhythm; watch for either bradycardia or tachycardia.

5. Laboratory Tests: RBC and plasma cholinesterase. Other laboratory tests should be performed.

6. Treat with atropine when appropriate.

(DO NOT TREAT IF ASYMPTOMATIC!)

a. In general, atropine is needed only if at least one or more of the following are present:

! Alteration in mental status; confusion; seizures.
! Nausea, vomiting, diarrhea, or abdominal cramps.
! Pupillary constriction.
! Salivation.
! Diaphoresis.
! Respiratory distress, wheezing, pulmonary edema.
! Significant arrhythmia (particularly bradycardia).

b. Atropine treatment:

(1) Adults: Give atropine sulfate 0.5 to 1.0 mg initially, followed by 2 to 4 mg repeat 2 to 4 mg every 3-10 minutes as needed until signs of parasympathetic (muscarinic) toxicity are controlled, the mouth is dry, and airway is clear. At this point, the pupils will generally be dilated, although not invariably, and the skin will be warm and dry.

(2) Children: Atropine sulfate, 1 mg or 0.05 mg/kg, as above.

C. Pralidoxime (2-PAM) is not recommended for carbamate poisoning.

8. If ingestion is suspected, initiate gastric lavage and administer activated charcoal.

9. Other general treatment guidelines:

a. Watch for signs of atropine toxicity. Note that disorientation, uncooperative behavior, hallucinations, blurred vision, tachycardia, fever, and convulsions may be due to atropine itself.

b. Respiratory depression, due in part to respiratory muscle paralysis, is the usual cause of death, and it not completely prevented by atropine.

c. Remove pulmonary secretions by suctions if necessary.

d. If seizures are not responsive to atropine, treat with diazepam, 5 to 10 mg by slow IV push or lorazepam 2-4 mg IV. Phenobarbital, or phenytoin, may be used.

10. Significant poisoning does not occur unless cholinesterase levels are depressed at least 30% below individual's baseline levels, although this level may be within the laboratory range for normal values. In severe poisoning, levels are depressed 90% or more. It may be necessary to recheck cholinesterase levels in a few days to determine the individual's normal baseline cholinesterase levels. Cholinesterase levels are helpful in documenting exposure to carbamate pesticides, although they may be less helpful for emergency management.

11. If the patient complains of eye irritation, check for presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

PESTICIDES - ORGANOPHOSPHATES

FORMS:

Liquid (usually solution with xylene or other organic solvent), solid (wettable powder). May be inhaled in an aerosol form or as a component of smoke.

BACKGROUND:

Organophosphate pesticides are widely used in home gardening and commercial agriculture. A variety of products are available, with widely varying potencies. Organophosphate pesticides inhibit the enzyme cholinesterase, resulting in buildup of excessive acetyicholine. Symptoms and signs include hypersalivation, sweating, bronchospasm, abdominal cramps, diarrhea, muscle weakness, small pupils, twitching and seizures. Death is due to respiratory muscle paralysis. For certain orgdnophosphates, if victim survives the acute poisoning, they may develop delayed onset peripheral netiropathy. Nonspecific symptoms such as upper respiratory irritation, dizziness, nausea and headache after inhalation exposure may be due to the solvent vehicle (e.g., xylene) and not due to cholinesterase inhibition. Potential toxicity of the solvent vehicle should always be considered.

POTENTIAL FOR SECONDARY CONTAMINATION:

Many organophosphates are well-absorbed through intact skin, and thus may pose a serious hazard to rescuers or health care personnel. Simple water washing may be insufficient to remove oily compounds.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing and consider high tiow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double-bag clothing. Flush skin with water spray for 1 - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PESTICIDES - ORGANOPHOSPHATES

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23). In addition, wash oily contaminated areas with soap and/or shampoo.

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubating the trachea if victim is unconscious or has developed severe respiratory distress. Continue to provide high-flow oxygen by mask. Attach cardiac monitor.

3. If the victim is symptomatic (e.g., excessive salivation, abdominal cramps, diarrhea, wheezing, sweating, bradycardia) administer atropine 0.5-1.0 mg initially, followed by repeated 1-2 mg doses every 3-5 minutes as needed for severe poisoning (severe bronchospasm or bradycardia).

4. Ingestion: If available, administer activated charcoal 60-100 gm orally.

   DO NOT induce emesis.

5. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.32).

   In addition, wash oily contaminated areas with soap and/or shampoo. Mucous membranes may require vigorous lavage. Wash ear canals and under finger nails.

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Administer 0_2 by mask or endotracheal tube.

4. Monitor cardiac rhythm; watch for either bradycardia or tachycardia, or for ventricular ectopy.

5. Laboratory Tests: RBC and plasma cholinesterase. Follow arterial blood gases if the patient has respiratory distress or altered mental status. Other laboratory tests should be done as clinically indicated.

6. Treat with atropine when appropriate.

   (DO NOT TREAT IF ASYMPTOMATIC!)

   a. In general, atropine is needed if one or more of the following are present:

      ! Altered mental status or seizures.
      ! Nausea, vomiting, diarrhea, or abdominal cramps.
      ! Pupillary constriction.
      ! Excess salivation.
      ! Respiratory distress, wheezing, pulmonary edema.
      ! Significant dysrhythmia (particularly bradycardia).
      ! Other medical conditions may cause these symptoms and should be ruled out.

   b. Atropine treatment:

      (1) Adults: Atropine sulfate, 0.5 to 1.0 mg initially, followed by 2 to 4 mg IV; repeat 2 to 4 mg every 3-10 minutes as needed until signs of parasympathetic (muscarinic) toxicity are controlled, the mouth is dry, and airway is clear. At this point, the pupils will generally be dilated, although not invariably, and the skin will be warm and dry.

      (2) Children: Atropine sulfate, 0.05 mg/kg, or 1 mg as above.

   c. Pralidoxime chloride (2-PAM, or Protopam) is best given early (but may be of value in the first few days) and will reactivate some cholinesterase activity. Treatment with pralidoxime is most helpful for control of nicotinic symptoms, particularly generalized muscle weakness or fasciculation which may contribute to respiratory paralysis. Dose is 1 gm for adults and 25-50 mg/kg for children, given IV over 5-10 minutes. In severe cases this may be repeated in 1 hour. Repeat treatment may be needed (can give 1-3 gm IV every 6 to S hours), especially for agents with prolonged effects like fenthion.

8. If symptoms have not appeared and ingestion is suspected, initiate gastric lavage and administer activated charcoal.

9. Other general treatment guidelines:

    a. Watch for signs of atropine toxicity. Note that disorientation, uncooperative behavior, hallucinations, blurred vision, tachycardia, fever, and convulsions may be due to atropine itself.

    b. Respiratory depression, due in part to respiratory muscle paralysis, is the usual cause of death, and is not completely prevented by atropine.

    c. Remove pulmonary secretions by suction if necessary.

    d. If seizures are not responsive to atropine, treat with diazempam, 5 to 10 mg by slow IV push or Lorazepam 2-4 mg IV. Phenobarbital may also be used.

10. Significant poisoning does not occur unless cholinesterase levels are depressed at least 30% below the individual's baseline levels, although this level may be within the laboratory range for normal values. In severe poisoning, levels are depressed 90% or more. It may be necessary to recheck cholinesterase levels in 3 to 6 weeks to determine the individual's normal baseline cholinesterase levels. Note that some other conditions, including chronic cocaine use, can depress cholinesterase levels. Cholinesterase levels are helpful in documenting exposure to organophoshate pesticides, although they may be less helpful for emergency management.

11. If the patient complaints of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

PETROLEUM DISTILLATES (COMMONLY USED) AND RELATED HYDROCARBON PRODUCTS
(Including Gasoline, Kerosene, Naphtha, and Mineral Spirits)

FORMS:

This group includes a wide variety of commonly used liquid hydrocarbon mixtures (see Table below), many of which are highly flammable or combustible.

BACKGROUND:

The term "petroleum distillates" refers to a variety of liquid hydrocarbon mixtures derived by fractional distillation or by catalytic cracking of crude oil. Terpenes are included in this group; they are plant-derived products such as citrus, pine, and eucalyptus oils.

The health effects and medical management of these substances are similar. Inhalation of vapors may produce headache, dizziness, nausea, and weakness. Intense exposure in an enclosed space may result in loss of consciousness, coma or convulsions mainly because of oxygen displacement. Exposure to vapors may also produce eye, nose and throat irritation.

Ingestion may cause nausea, vomiting, and abdominal cramps. Although aliphatic hydrocarbons are less well absorbed and usually produce no systemic symptoms, benzene, xylene, toluene and related aromatics are well-absorbed and may cause seizures, CNS depression, and cardiac sensitization.

Aspiration into the lungs may occur during ingestion. Pulmonary aspiration of even small amounts can result in severe chemical pneumonia. Patients with aspiration usually have immediate onset of coughing. Potential kidney damage, long-term neurological problems, benzene related cancer, defatting of skin, and skin burns may occur in some cases.

POTENTIAL FOR SECONDARY CONTAMINATION:

If the victim was exposed only to vapors, there is no risk of secondary contamination. Vapors off-gassing from heavily soaked clothing may produce nausea, eye and throat irritation, and other nuisance symptoms, especially in an enclosed area. Even after decontamination, rescuers may notice a slight nuisance odor, particularly in cases of ingestion. However, once the clothing has been removed and the victim flushed with water, there is no significant risk of secondary contamination of rescuers outside of the hot zone.

PETROLEUM DISTILLATES (COMMONLY USED) AND RELATED HYDROCARBON PRODUCTS (Including Gasoline, Kerosene, Naphtha, and Mineral Spirits)

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. Remove and double-bag soaked clothing, and flush exposed skin with water spray for 1-2 minutes. Use soap or shampoo for heavy contamination of skin or hair. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate the airway and need for assisted ventilation. Endotracheal intubation may be necessary if the victim is unconscious or has developed severe respiratory distress. Administer supplemental oxygen.

3. Aerosolized bronchodilators (such as metaproterenol) may be helpful for victims with wheezing.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

5 Ingestion: **DO NOT induce emesis.** Consider giving activated charcoal.

6. Victims with minimal exposure and those who are asymptomatic do not require immediate evaluation in the emergency department. Those with persistent cough, wheezing, or altered consciousness or skin burns should receive an immediate medical evaluation.

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.32)

2. Re-evaluate and support ABCs, administer supplemental oxygen, and monitor cardiac rhythm.

3. In patients with wheezing, administer aerosolized bronchodilator.

4. In patients with persistent cough or respiratory distress, obtain arterial blood gases and chest xray. Intubate if patient manifests severe respiratory distress. Obtain arterial blood gases and chest x-ray if respiratory distress is present. Intubation and assisted ventilation may be needed in severe cases of aspiration-induced chemical pneumonia to maintain adequate oxygenation.

5. If this patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

PETROLEUM DISTILLATES (COMMONLY USED) AND RELATED HYDROCARBON PRODUCTS (Including Gasoline, Kerosene, Naphtha, and Mineral Spirits)

6. Ingestion: DO NOT induce emesis. If a large quantity (e.g., greater than 1 mg/Kg) of a product containing a high percentage of benzene-related aromatics or other toxic ingredients has been ingested, contact the regional poison control center for advice. Gastric lavage and activated charcoal may be advised depending on the circumstances.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

PETROLEUM DISTILLATES (COMMONLY USED)
AND RELATED HYDROCARBON PRODUCTS
(Including Gasoline, Kerosene, Naphtha, and Mineral Spirits)

Table: Commonly Used Petroleum Distillates

Product	Boiling Point	Constituents*
Petroleum Spirits	86-146 F	100% aliphatics
Gasoline**	104-400 F	95% aliphatics up to 5% aromatics including benzene
Rubber Solvent	113-257 F	95% aliphatics 5% aromatics
Painters' Naphtha	203-320 F	85% aliphatics 15% aromatics
Mineral Spirits	302-392 F	80% aliphatics 20% aromatics
Stoddard Solvent	320-410 F	85% aliphatics 15% aromatics
Diesel fuel, jet fuel, kerosene	350-600 F	100% aliphatics

* Aromatics include benzene and benzene derivatives.

** Gasoline may also contain toxic additives such as benzene and alkyl lead.

PHOSPHINE

FORMS:

Gas. Extremely flammable, may ignite spontaneously in air or explode on contact with flame. Phosphine gas is released when solid fumigants such as aluminum phosphide and zinc phosphide come into contact with moisture.

BACKGROUND:

Phosphine (PH_3) is an extremely toxic gas with a nauseating odor, used in the electronics industry, as an insect fumigant, and occasionally occurring as a by-product in manufacturing. Its toxicology is not well understood, but it appears to affect the central nervous system, the heart, lungs, and liver. Symptoms following low to moderate exposure include nausea, vomiting, headache, cough, dizziness, diarrhea, myalgias, fever, and chills. Severe exposure may produce syncope, stupor, coma, pulmonary edema, local myocardial necrosis, and death. Unlike arsine, phosphine does not produce hemolysis.

POTENTIAL FOR SECONDARY CONTAMINATION:

Very small amounts of phosphine can be trapped in a victim's clothing after an overwhelming exposure, but are not sufficient to create a hazard for health care personnel away from the scene.

PATIENT MANAGEMENT IN THE HOT ZONE I DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves fr~)m the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical.

3. If gas is likely to be trapped in clothing (i.e., significant exposure in an enclosed area), remove and double-bag clothing. Flush skin with water spray for I - 2 minutes.

PHOSPHINE

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Re-evaluate airway, intubate the trachea if victim has developed severe respiratory distress. Administer supplemental high-flow oxygen by mask. Attach cardiac monitor.

MANAGEMENT IN THE HOSPITAL:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs (airway, breathing, and circulation).

3. Administer 0_2 by mask, if the patient has respiratory distress.

4. Monitor cardiac rhythm; obtain 12-lead EKG. Following severe exposures, follow serial cardiac enzymes to rule out myocardial infarction.

5. Laboratory Test: Hct, electrolytes, BUN and/or creatinine, liver enzymes, Ca, Mg, and blood gases. Other laboratory tests should be requested.

6. Treat pulmonary edema. Symptoms may not develop for 72 hours.

7. Liver damage may become evident 2-3 days later.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

POLYCHLORINATED BIPHENYLS (PCB's)

FORMS:

PCBs occur as oily liquids. They are found in transformers, electrical generators, and capacitors. PCBs constitute a large class of chemicals with many isomers having varying toxicity; the term "PCB" is therefore broad and non-specific in determining the t6xic hazard.

BACKGROUND:

There are no recognized acute toxic effects of PCBs. For this reason, immediate medical attention is NOT necessary for exposure to this material alone. However, exposed victims should be decontaminated to prevent possible long-term effects. If acute distress occurs, especially after a fire or mixture with other chemicals, toxics other than PCB should be suspected. For example, PCBs may sometimes be encountered as mixtures with chlorobenzenes and chlorinated phenols which may increase their irritancy and tendency to form more toxic compounds when heated. For some individuals, PCBs are mild respiratory irritants.

In general, PCBs are absorbed through the skin, with minor contributions from the lungs and gastrointestinal tract. PCBs have an extremely low vapor pressure and do not present an inhalation hazard unless some physical process causes them to become airborne. Agent specific gloves should be worn. During emergency spills or leaks, respiratory protection may be advisable due to aerosolized oil particles containing PCBs, such as high-tension electrical fires in overhead devices.

As noted, PCBs are not acutely toxic. Adverse effects from short-term exposures as might occur in chemical spill scenarios are unlikely. However, PCBs are persistent in the environment and are stored in body fat. Long-term exposure to PCBs may cause chloracne or injure the liver. There is little evidence for other, more subtle effects of PCBs on health. The long-term effects in man are not well known and mostly based on animal and epidemiological studies which are not completely relevant to chemical spills.

High temperature fires or electrical shorts (over several hundred degrees Celsius) may produce higher concentrations of the more toxic substances (chlorinated dibenzofurans, dibenzofuran compounds, and dioxins) depending on oxygen availability and temperature. These agents can also accumulate in the body after long-term exposures to cause harm. The short-term exposures which might occur in a chemical spill scenario involving PCB fires are not likely to cause injury. The possibility of other more subtle adverse effects on health has been raised, but is not proven.

PCBs are weak carcinogens in animal studies. The animal and human evidence indicates that short-term exposures do not pose a significant risk of cancer.

POLYCHLORINATED BIPHENYLS (PCB's)

POTENTIAL FOR SECONDARY CONTAMINATION:

While acute exposure to these materials is unlikely to produce adverse health effects, it is good policy to minimize exposure to potential human carcinogens. This will help decrease the risk of delayed or long-term health effects from cumulative exposures during the course of employment.

PCBs are oily and have a high potential for sticking to clothing and skin, facilities and the environment in the hot zone may be contaminated. Secondary contamination of personnel, transport vehicles and hospitals is possible if rescue personnel or victims are not decontaminated.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir if possible and practical.

3. Follow decontamination protocols (Section IV, p.20 above). Remove and double-bag clothing. Flush skin with water spray for I - 2 minutes. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If the victim is not decontaminated, evaluate risks and wear appropriate protective clothing and self-contained breathing apparatus, if required, and activate basic decontamination protocol (see Section IV above).

   If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p; 20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p. 18, and Table 5, p.23).

2. Quickly evaluate ABCs, spine stabilization (if trauma suspected), establish airway and breathing, and administer supplemental oxygen.

3 Evaluate and support ABCs (airway, breathing, and circulation). Reevaluate airway, intubate the trachea if victim has developed sever respiratory distress. Administer supplemental high-flow oxygen by mask. Attach cardiac monitor.

4. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

5. Victims with immediate or quickly resolving symptoms or whose only exposure is dermal do not require immediate medical attention.

6. Ingestion: Give activated charcoal.

MANAGEMENT IN THE HOSPITAL:

1. If the patient has not been previously decontaminated, evaluate risks and wear appropriate protective clothing and self-contained breathing apparatus, if required, activate decontamination protocols (Section IV, p.20).

   If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or contact your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, and Table 7, p.32).

2. Evaluate and support ABCs.

3. It is not anticipated that single PCB exposures would lead to transaminase elevations. However, in the event of large body surface area contaminations with PCB oils (such as saturation of an entire extremity), baseline hepatic transaminase and liver function studies may be obtained. This is clearly not an emergency procedure, but if deemed desirable, should be done within 24 hours. The purpose of the baseline is to determine any unrecognized, pre-existing liver enzyme elevations from other causes. A follow-up evaluation in 4-7 days with repeat studies may be conducted at the physician's discretion. Serum PCB levels do not correlate well with health risk or with the degree of exposure in an acute setting.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. Ingestion of PCB oils: Give activated charcoal and consider gastric lavage.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

SMOKE INHALATION

FORMS:

Smoke is a complex combination of various toxic gases, vapors, entrained liquids, aerosolized dusts, carbonized particles, and super heated steam resulting from burning a variety of substances. Common toxic substances include carbon monoxide, hydrogen cyanide, irritant gases such as acrolein, ammonia, hydrogen chloride, phosgene, nitrogen oxides, metal fumes, and carbonaceous particulates. The proportion of each component depends on the substances and conditions of combustion. Fires involving stored chemicals may produce smoke with very high concentrations of the specific toxins such as pesticides.

BACKGROUND:

Smoke inhalation injury results from the combined effects of the various inhaled toxic substances as well as direct thermal injury to the airway. Stridor, wheezing, tracheobronchitis, and acute upper airway obstruction may occur from irritant gases and thermal effects. Acute non-cardiogenic pulmonary edema and chemical pneumonia may occur shortly after exposure or may be delayed up to several hours, especially after exposure to nitrogen oxides.

In any victim with altered mental status, suspect inhalation of a systemic toxin such a carbon monoxide (see protocol), hydrogen cyanide (see protocol), agents producing methemoglobinemia (see protocol), or smoke laden with a stored chemical such as pesticides (see protocol) or those found in drug laboratory chemicals.

POTENTIAL FOR SECONDARY CONTAMINATION:

Although small quantities of acid, amine, or ammonia mists may be absorbed onto clothing from smoke, they pose no significant risk of secondary contamination of rescuers outside of the hot zone, even though odor and carbon deposits may be a nuisance. If the victim has been exposed to heavy concentrations of liquid or vapor from a warehoused chemical, then removal of clothing and flushing with water is appropriate.

PATIENT MANAGEMENT IN THE HOT ZONE/ DECON AREA:

1. Rescuers should don agent-specific protective clothing and gloves, and self-contained breathing apparatus.

   Ambulatory patients should be instructed to remove themselves from the hot zone and to decontaminate themselves under the direction of the decontamination supervisor.

2. Quickly evaluate and support ABCs. Stabilize the spine (if trauma suspected), establish airway and breathing, and consider high flow supplemental oxygen by bag valve mask with reservoir, if possible and practical. Flush exposed skin for 1 - 2 minutes.

3. Remove contaminated clothing. Treat exposed clothing appropriately, according to agent involved. Remove contact lenses and irrigate exposed eyes if symptomatic.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

1. If victim is **NOT** decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20) consistent with specific agents involved in the fire. If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 5, p.23).

2. Evaluate and support ABCs (airway, breathing, and circulation). Reevaluate the airway, observing the nose and mouth for soot deposits and singed hair which suggests that thermal injury to the airway may have occurred. Evaluate and manage airway. Provide high-flow oxygen by non-rebreather mask. If airway is becoming compromised, intubation is preferable. Monitor cardiac rhythm and establish IV TKO.

3. Significant bronchospasm can result from smoke exposure. For asthmatics and, based on good clinical judgement, for other exposures, wheezing or other signs of airway constriction should be treated with a cardio-selective agent such as aerosolized albuterol.

   Some components of smoke can sensitize the myocardium, and epinephrine and theophylline should be **AVOIDED**.

4. Victim with minimal or quickly resolving symptoms of eye and throat irritation do not require immediate evaluation in the emergency department. Those with persistent cough, wheezing, dyspnea, chest pain or altered mental status should receive immediate medical evaluation.

5. These protocols do not supersede existing burn protocols.

6. Continue to flush affected skin and eyes with copious water or saline. Remove contact lenses and irrigate eyes with saline via plain IV tubing, for at least 10-15 minutes or until symptoms of pain or irrigation have resolved.

SMOKE INHALATION

MANAGEMENT IN THE HOSPITAL:

1. If victim is NOT decontaminated and responder is properly trained, don appropriate agent-specific protective equipment and self-contained breathing apparatus. Activate basic decontamination protocol (see Section IV, p.20). If these requirements cannot be met, request assistance from the local hazmat team or your Regional Poison Control Center.

   If victim is decontaminated, don appropriate protective equipment consistent with risk of secondary contamination (Section III, p.18, and Table 7, p.32).

2. Reevaluate and support ABCs. If the victim is contaminated, activate basic decontamination protocol (see Section IV above).

3. Provide high-flow humidified supplemental oxygen by tight fitting mask with oxygen reservoir. Intubation and assisted ventilation may be required for victims with airway obstruction, severe pulmonary edema, coma, or convulsions. Patients at risk for airway obstruction often have facial burns, singed nasal hairs, or carbonaceous sputum in addition to cough and stridor. Pulmonary edema may be delayed for up to 12-24 hours.

4. If the patient complains of eye irritation, check for the presence of contact lenses and remove, then irrigate eyes copiously with saline via plain IV tubing for at least 10-15 minutes, or until symptoms of pain or irritation have resolved. Consider fluorescein or slit-lamp examination to rule out corneal injury.

5. For symptomatic patients, obtain arterial blood gases, carboxyhemoglobin level, methemoglobin level, cyanide level (result will not usually be available stat), base line pulmonary function and diffusing' capacity if available, chest x-ray, and 12-lead electrocardiogram. Severe methemoglobinemia will turn the blood brown. Cherry red skin color suggests carbon monoxide poisoning but is not reliably present.

6. Monitor cardiac rhythm.

7. If carbon monoxide poisoning is suspected, provide the highest possible oxygen concentration readily available. This may include hyperbaric oxygen if the victim can be placed in the chamber within 3040 minutes of arrival.

8. Cyanide poisoning should be suspected in any patient with altered mental status; it commonly accompanies and mimics carbon monoxide poisoning. Unfortunately, there is no rapid confirmatory test for cyanide; in severe cases, the venous oxygen saturation may exceed 90% because oxygen is not being utilized by tissues. If cyanide poisoning is suspected, administer the thiosulfate portion of the antidote kit (sodium thiosulfate 25%, 50 mi IV [children 1.6-1.8 mi/kg IV]).

DO NOT give the nitrite portion of the antidote kit because of the danger of inducing or worsening methemoglobinemia under these circumstance.

9. In most cases of minor smoke inhalation, asymptomatic patients can be monitored and discharged from the emergency department after 4-6 hours with appropriate discharge instructions.

FOR ADVICE ON CLINICAL MANAGEMENT, CALL YOUR
REGIONAL POISON CONTROL CENTER AT:
(___) ___-____

Date Revised: 07/31/90

Appendix M

BINATIONAL HAZARDOUS MATERIALS PREVENTION

AND EMERGENCY RESPONSE PLAN AMONG

THE COUNTY OF SAN DIEGO,

THE CITY OF SAN DIEGO, CALIFORNIA

AND THE CITY OF TIJUANA, BAJA CALIFORNIA

This plan is being updated in 2011

Binational Hazardous Materials Prevention and Emergency Response Plan Among the County of San Diego, the City of San Diego, California, and the City of Tijuana, Baja California

BINATIONAL HAZARDOUS MATERIALS PREVENTION AND EMERGENCY RESPONSE PLAN AMONG THE COUNTY OF SAN DIEGO, THE CITY OF SAN DIEGO, CALIFORNIA AND THE CITY OF TIJUANA, BAJA CALIFORNIA

October 24, 2003

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This plan was prepared by a Steering Committee for the communities of San Diego County and the City of San Diego, California, and the City of Tijuana, Baja California. The planning effort was facilitated and funded by the U.S. Environmental Protection Agency, Region IX. The Steering Committee members include:

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BINATIONAL HAZARDOUS MATERIALS PREVENTION AND EMERGENCY RESPONSE PLAN AMONG THE COUNTY OF SAN DIEGO, THE CITY OF SAN DIEGO, CALIFORNIA, AND THE CITY OF TIJUANA, BAJA CALIFORNIA

FOREWORD

In 1999, the United States of America and Mexico signed a Joint Contingency Plan (JCP) that established a foundation for cooperative efforts regarding prevention, preparedness, response, and mitigation of hazardous substances releases in the border area, which is defined as 62.2 miles (100 km) on either side of the inland international boundary. The JCP serves as an umbrella plan which sets forth a broad framework for planning efforts for the 14 Sister City pairs on the U.S.- Mexico border from California through Texas. The federal governments of the United States of America and Mexico acknowledge the need to develop plans and establish preventive and response mechanisms between Sister Cities. They recognize the benefits of cross border response and cooperative sharing of resources and manpower in times of national disasters. So too, the communities of San Diego County/City of San Diego, California and Tijuana, Baja California recognize their need to cooperate with each other in times of local disasters and to take measures to reduce risks and mitigate incidents.

This binational plan calls for increased communication, coordination and cooperation in response to an accidental or deliberate hazardous substance release in the border area. Its goals and objectives are to more effectively and efficiently utilize resources on both sides of the border to prevent and respond to emergency situations to protect public health, environment, and property in the border area.

It is not the intent of this plan to supersede any existing local, state, regional, or federal authorities or plan when a disaster or emergency has been declared in the border area. Rather, the purpose is to complement existing plans and to better serve the local community by creating an infrastructure for responding to emergencies.

MEMORANDUM OF UNDERSTANDING
ON CROSS BORDER COMMUNICATIONS AND EMERGENCY RESPONSE STRATEGIES FOR POLLUTING INCIDENTS FOR THE COMMUNITIES OF TIJUANA, BAJA CALIFORNIA, MEXICO,
THE CITY OF SAN DIEGO, CALIFORNIA, UNITED STATES, AND THE COUNTY OF SAN DIEGO, CALIFORNIA, UNITED STATES

The City of Tijuana, Baja California, the County of San Diego and the City of San Diego, California have agreed to cooperate to effectively reduce the risk of threats to the public health, safety and welfare of their communities caused by explosions, fires, spills, or releases of hazardous substances into the environment. This Memorandum of Understanding (MOU) is to reinforce the cooperation among the jurisdictions to assist them in preventing and responding more efficiently to these emergencies, as well as properly notifying counterpart agencies in the event of an incident on either side of the international border.

The signatory parties have developed this MOU and related emergency preparedness and response plan with the support of the U.S. Environmental Protection Agency pursuant to established binational environmental protection agreements between the two nations. Fourteen (14) pairs of sister cities along the US/Mexico border have been designated to develop similar agreements for binational cooperation.

The following statements of principles are intended to serve as a guide to emergency planning and response authorities in all three jurisdictions.

1. Nothing in this understanding shall revoke or diminish the application of United States law in the United States or Mexican law in Mexico. However, the authorities of either country may request the assistance of the other country in order to mitigate the situation.

2. The agencies of all three jurisdictions charged with emergency responsibilities will seek to ensure that in areas of common concern, plans of all three jurisdictions for the emergency use of manpower, material resources, supplies, systems, and services shall, where feasible and practicable, be compatible and involve mutual training. To this end, and in accordance with the Border 2012 program, a Binational Emergency Preparedness and Response Task Force will be established and will meet regularly. The Task Force will address planning and preparedness activities, and training needs, and conduct a biennial binational exercise to evaluate and improve the coordination of this binational plan.

3. It is mutually agreed that this MOU does not relieve any of the mentioned parties of the obligation to provide protection against fires or other emergencies, according to their respective jurisdictions, and to use reasonable diligence in maintaining all equipment in adequate condition according to applicable standards.

4. Although the binational plan establishes important protocols for ongoing coordination and cooperation, there remain issues that may require state or federal legislation to resolve, and other issues that may remain outstanding. Some of these challenges are:

a) Emergency response equipment is not covered by U.S. insurance policies once the vehicles and equipment cross the international border in either direction.

b) Good Samaritan laws do not protect U.S. emergency responders from a personal liability lawsuit in Mexico.

c) There does not now exist an accepted standard communication frequency to coordinate incident response within the border area with a common license to operate on compatible frequencies.

It will be necessary to pursue resolution of these issues at the federal, state and local levels in both countries. A possible solution would be umbrella coverage through the state or federal governments for emergency vehicles and personnel, and licensing of the border emergency response participants to operate on compatible frequencies on both sides of the border. The Task Force will seek to explore options and resolution of these issues with those governmental agencies of jurisdiction.

5. Response Limitations

In light of the conditions described in Section 4, the County of San Diego and City of San Diego are presently not able to cross the international border to respond to an incident in Mexico. Roles and responsibilities are limited to technical assistance, training, exercises, notifications and hazardous materials information exchange as well as the commitment to prevent and reduce risks, both accidental and deliberate.

A) Notification

The signatory parties agree to provide timely binational notification to counterpart authorities in the event of a hazardous materials incident within a two-mile radius of the international border. A Notification Flow Chart has been developed and included in the binational plan. The parties agree to periodically exercise notifications to ensure proper and timely communications. Any changes in phone numbers, or proposed changes to notification procedures, will be communicated promptly.

B) Hazardous Materials Information Exchange

To assist in the proper identification of potential risks, the County of San Diego and the City of Tijuana agree to the semiannual exchange of information regarding the location, types and estimated quantities of chemicals handled by facilities located within the two-mile radius of the international border, as described in the binational plan. This information is to be treated as confidential and is intended only for use as a reference for first responders in these jurisdictions. This information will be exchanged on compact disk.

C) Technical Assistance

The signatory parties agree to provide limited technical assistance as requested by counterpart agencies. This technical assistance may include, but is not limited to, analysis

of conditions and circumstances of a given incident, the assessment of potential equipment purchases and training, exercises, prevention and risk reduction. Training will be provided, as funding is available.

6. For the purpose of emergency relief, and health and welfare services, each government will use its best efforts to ensure that those affected by an incident receive the best treatment available.

7. Each government will use its best efforts to protect and restore the natural environment during and after an incident.

8. Every two years, the parties will examine the present MOU and implementation and decide whether it should be modified. In addition, at any time, the parties may examine this understanding and propose changes to the other party by personal service or certified mail. Changes will be considered effective starting on the date of the amendment's signing by all parties.

9. Any party to this understanding may withdraw at any time by giving thirty calendar days prior written notice to all the parties.

Any party may change its service address by giving five calendar days written notice to each of the other parties.

Notice of withdrawal and change of address shall be served by personal service or by the respective party's Postal Service certified mail addressed to:

Board of Supervisors
San Diego County
1600 Pacific Highway
San Diego, California 92101

Presidencia Municipal
Ayuntamiento de Tijuana, B.C.
Av. Independencia Esquina Paseo del Centenario
Zona Urbana Río, C.P. 22320

City of San Diego
City Clerk
202 C Street
San Diego, California 92101

In witness, whereof, this understanding has been executed on October 24, 2003.

//Original signed by//
Greg Cox
Chairman, Board of Supervisors
San Diego County, California

//Original signed by//
C. Jesús González Reyes
Presidente Municipal
Tijuana, Baja California

//Original signed by//
Clerk of the Board
San Diego County, California

//Original signed by//
Secretario del Ayuntamiento
Tijuana, Baja California

//Original signed by//
Dick Murphy
Mayor
City of San Diego, California

//Original signed by//
City Clerk
City of San Diego, California

PARTICIPATING AGENCIES

Federal, state and local officials from the United States and Mexico joined to develop this binational prevention and emergency response plan for the San Diego/Tijuana border area. This plan will improve communication, coordination and cooperation among members of the emergency planning and response community regarding a hazardous substance release. The objectives of the plan are to use resources effectively, to reduce polluting incidents and to protect public health, safety and the environment.

A Steering Committee composed of key agencies listed below guided the development of this regional accord.

The following are brief introductions to the governmental agencies that participated in the plan development. These same entities will ultimately be responsible for its successful implementation.

MEXICO AGENCIES

Baja California Civil Protection Administration
The Civil Protection Administration is in charge of organizing, coordinating and operating the State's Civil Protection System, as well as conducting strategic planning and coordinating emergency response actions when the needs of a municipality surpass its resources to respond to an emergency or when so requested. The State Civil Protection Administration provides guidance to local authorities and provides resources to identify and mitigate risks. The Administration sets policies for planning and responding to natural or technological catastrophes.
www.depcbc.gob.mx

Civil Protection Administration of the Municipality of Tijuana
The Civil Protection Administration at the local level in Tijuana assumes a general coordinating role in major emergency events. Civil Protection is responsible for the development of prevention programs, as well as response and recovery in the case of major emergencies. Civil Protection also keeps and maintains records of human resources, material and equipment to be used in emergencies.

Secretariat of the Environment and Natural Resources (SEMARNAT)
SEMARNAT has among its main functions the establishment of Mexican Official Standards in the area of ecology and compliance monitoring, as well as regulating and controlling activities considered high risk. This includes the generation, handling and final disposal of materials and wastes considered hazardous to the environment and ecosystems. Other related functions are: to regulate the sustainable recovery of natural resources and flora and fauna, both land and aquatic; and to evaluate findings of environmental impact studies and risk assessments to prevent ecological accidents. The Secretariat also participates in the prevention and control of emergency and environmental incidents in accordance with civil protection policies and programs. www.semarnat.gob.mx

Tijuana Fire Department

The Tijuana Fire Department is the primary response entity for the City of Tijuana. The Department has many capabilities, including hazardous materials response. The Fire Department works in cooperation with local Civil Protection authorities. The Tijuana Fire Department has developed a solid working relationship with counterpart agencies in San Diego.

Federal Attorney General for the Protection of the Environment (PROFEPA)

PROFEPA is in charge of monitoring and promoting compliance with environmental and natural resource legislation, through authority actions (inspection and monitoring), through its personnel directly, or concurrently with the community and other government agencies. It evaluates and imposes sanctions on illegal acts in order to contribute to the permanent improvement of renewable natural resources and environmental conservation. PROFEPA's scope of environmental authority in the industrial area is: hazardous wastes, risks, air, environmental impacts, noise and environmental audits. With regard to natural resources, the areas of PROFEPA's authority are: forestry, wild life, cynegetics, environmental impact, the marine land federal zone and phytosanitary.
www.profepa.gob.mx

Secretariat of the Navy

This Secretariat works closely with SEMARNAT, PROFEPA and the United States Coast Guard regarding polluting marine incidents affecting the United States and Mexico. The Secretariat of the Navy and the United States Coast Guard signed the MEXUS agreement, which provides joint response protocol to polluting incidents in the marine environment. The Pacific Annex to this agreement, called MEXUSPAC, refers specifically to the marine environment in the California and Baja California area.
www.semar.gob.mx

Secretariat of Health

This Secretariat is in charge of enforcing the Epidemiology Surveillance System to respond to manmade and natural incidents. The Secretariat also maintains hospital units with emergency services in border cities. The Environmental Health department of the Secretariat coordinates service sites at the border in charge of International Health for control and regulation purposes. Environmental Health also regulates technological incidents involving chemical and radioactive substances.
www.salud.gob.mx

Mexican Customs

The main function of Customs is to inspect, monitor and control the import and export of merchandise, including its means of transportation, by ensuring compliance with the provisions issued by the Secretariat of the Treasury, and other authorized Federal Government secretariats. Customs also assists in guaranteeing national security, and protecting the country's economy, public health and the environment by preventing the flow of hazardous or illegal materials into national territory. Customs in the city of Tijuana, Baja California has sections and/or checkpoints at the Abelardo L. Rodriguez International Airport, Mesa de Otay and Puerta Mexico.
www.aduanas.sat.gob.mx

Federal Preventive Police (PFP

The main function of the Federal Preventive Police is to safeguard people's rights, prevent crime, and maintain liberty, public order and peace under the terms of the Federal Preventive Police Law. For public security purposes, PFP has the authority to monitor and inspect the import and export of merchandise, as well as the entrance and exit of persons at airports, marine ports authorized for international traffic, Customs facilities, fiscal yards, Customs sections, gates and Customs checkpoints. With regard to emergency response, PFP works at the request of the other authorities, particularly with Civil Protection in public disaster situations, high-risk situations or natural catastrophes. The PFP is trained to use the Emergency Response Guide in cases that involve responding to hazardous materials releases. The PFP is also an important agency in the monitoring of potential terrorist activity in Mexico.

UNITED STATES AGENCIES

U.S. Environmental Protection Agency, Region IX

U.S./Mexico Chemical Emergency Preparedness and Response

EPA's U.S./Mexico Border Program for Chemical Emergency Preparedness and Response conducts, sponsors and participates in a variety of activities to help border communities plan for and respond to accidental and deliberate releases of hazardous materials. EPA conducts scientific and technical research to identify hazardous material risks. EPA promotes program development, including facilitation of binational, multi-agency forums and Sister City Plans. The agency provides and actively advocates funding and support to improve local emergency responder readiness and sponsors hazardous material exercises. EPA provides training and support to other U.S. federal, local and state agencies, as well as to emergency responders in Mexico. Upon activation of the Joint Response Team, EPA is authorized to provide technical assistance and conduct emergency response actions in Mexico, in cooperation with Mexico authorities.

www.epa.gov

Bureau of Customs and Border Protection

Any hazardous material incidents occurring at the ports of entry will be contained as much as possible and first responders will be notified. Federal Inspection employees assigned to the ports of entry are trained to deal with emergency situations and have emergency response plans in place. The Federal Agencies have installed a Border Mutual Aid Radio System (BMARS) that provides immediate communications capabilities with Mexican officials at the Mexico/U.S. border crossings for coordination and notification of any serious incidents. Customs management officials participate in the Border Liaison Mechanism (BLM) Group chaired by the U.S. and Mexican Consul Generals. The Group is comprised of a variety of working groups and meets regularly to address any cross border issues dealing with law enforcement situations, emergency procedures or other concerns.

www.cbp.gov

State of California Governor's Office of Emergency Services (OES)

OES coordinates overall state agency response to major disasters in support of local government. OES interfaces with the U.S. federal government for emergency response and recovery. OES works with the Federal Emergency Management Agency for disaster preparedness and response. OES manages the California Specialized Training Institute in San Luis Obispo. OES is active in U.S./Mexico border projects, including the Coast Guard's MEXUSPAC Plan.

www.oes.ca.gov

San Diego County Office of Emergency Services

The San Diego County Office of Emergency Services provides training to local governments and citizens on preparing for disasters. This office provides emergency information through the use of the Emergency Alert System (EAS) and the Life Saving Information for Emergencies Radio System (L.I.F.E.). This office also coordinates the development of the operational Area Emergency Plan and provides training to member jurisdictions in the use of the plan. The Office serves as a coordinator. The Office administers the County's Hazardous Incident Response Team (HIRT) program and is a partner with the HIRT team to provide joint chemical and biological emergency response to the cities and unincorporated areas throughout the County. The Office works closely with the City of San Diego Fire-Rescue Department and the County's Department of Environmental Health, and operates the County's Emergency Operations Center.

www.co.san-diego.ca.us/cnty/cntydepts/safety/disaster

County of San Diego Department of Environmental Health (DEH), Hazardous Materials Division (HMD)

The mission of DEH is the protection of the environment and enhancement of public health by preventing disease, promoting environmental responsibility and, when necessary, enforcing environmental and public health laws. The Department of Environmental Health, Hazardous Materials Division, is the Certified Unified Program Agency for the County. HMD is responsible for regulating hazardous waste and tiered permitting, hazardous materials business plans and chemical inventory, underground storage tanks, risk management plans, and medical wastes in business located throughout San Diego County. HMD's emergency response team is part of the County's Hazardous Incident Response Team (HIRT) and responds to over 300 emergency incidents each year. HMD also has a pivotal role, in coordination with the U.S. EPA, in emergency response planning and training. The HMD, under contract with the Department of Toxic Substances Control (DTSC) and in coordination with U.S. Customs Service, monitors the Otay Mesa and Tecate ports of entry for illegal shipments of hazardous wastes. In addition, HMD provides training in the United States and Mexico on requirements for the handling, storage, and transportation of hazardous wastes and materials, pollution prevention and emergency response.

www.sdcdeh.org

United States Coast Guard

The U.S. Coast Guard is responsible for preventing and coordinating responses to oil and other hazardous material spills in the coastal zone or marine environment in the United States/Mexico border area through the United States/Mexico Joint Contingency Plan and the MEXUS Plan. The Commanding Officer of the San Diego Coast Guard Marine Safety Office, as the Pre-designated Federal On-Scene Coordinator (FOSC), actively coordinates border planning, preparedness and response activities with the Second Naval District in Ensenada, Baja California and is implementing a regional annex to the MEXUS Plan. Should a discharge occur, the U.S. Coast Guard maintains a rapid response capability to coordinate the containment and recovery of oil and hazardous substances from pollution incidents. In addition, the U.S. Coast Guard National Strike Teams are at the ready to assist in responses to major oil or other hazardous material spills in the inland waterways and coastal regions.
www.uscg.mil/uscg.shtm

San Diego Fire-Rescue Department

San Diego Fire-Rescue Department staffs a Hazardous Materials Response Team with on-duty firefighter personnel trained to the Hazardous Materials Technician and Specialist level. The mission of this team is to protect life, property, and environment from the adverse effects of hazardous materials emergencies. This specialized response service is provided to all areas within the City and County of San Diego. As a resource to the local on-scene Incident Commander, the Hazardous Materials Response Team primarily conducts identification, rescue, and mitigation operations for all types of chemical and biological emergencies. All Fire-Rescue personnel are trained to the Hazardous Materials First Responder Operational level, are skilled in performing mass casualty decontamination, and work effectively in the Incident Command System (ICS). The Fire-Rescue Department has bilingual liaisons (Spanish/English) who are available to assist with binational events, including training and technical assistance.
www.sannet.gov/fireandems

California Department of Forestry and Fire Protection (CDF)

CDF has its own binational aid agreement with Mexico through the Border Agency Fire Council. The agreement enables firefighters to travel beyond the border of the neighboring country to fight a fire, up to one mile into Mexico or the United States. Firefighting equipment has already been pre-registered with U.S. Customs to facilitate its return, which must occur through a designated port of entry. The Fire Council has received national recognition for its efforts.
www.fire.ca.gov

California Highway Patrol (CHP)

CHP is an emergency responder and scene manager. CHP has jurisdiction on all freeways and all roadways within the unincorporated areas of California. CHP has a key role in emergency response involving areas within its jurisdiction. The CHP contributes to public safety through its truck inspection facility at Otay Mesa. www.chp.ca.gov

San Diego Police Department

The San Diego Police Department is a public safety agency with emergency response capabilities. Operating under the Standardized Emergency Management System (SEMS) / Incident Command System (ICS) the SDPD provides the following functions at the scene of an emergency: The SDPD will assess the situation immediately and request appropriate agencies and resources. The SDPD will provide scene security, crowd and traffic control. If necessary, the SDPD will develop and implement a plan to evacuate. If the incident is within the jurisdiction of the City of San Diego and is determined to be the result of criminal activity the SDPD will conduct a joint investigation with other involved agencies.
www.sannet.gov/police/

BACKGROUND

In 1983, the United States of America and Mexico signed the La Paz Agreement. This landmark document sets forth binational cooperation for the protection, improvement and conservation of the environment in the border area. Annex II of the La Paz Agreement created a Joint Response Team (JRT) whose major responsibility was to author a Joint Contingency Plan (JCP). In 1988, the U.S. and Mexico signed the *Joint United States of America - United Mexican States Contingency Plan for Accidental Releases of Hazardous Substances Along the Border*, revised in June 1999 as the *Joint United States - Mexico Contingency Plan for Preparedness for and Response to Environmental Emergencies Caused by Releases, Spills, Fires, or Explosions of Hazardous Substances in the Inland Border Area.*

The JCP specifically calls for the development of Sister City Plans for the 14 Sister City pairs along the U.S.-Mexico border from California to Texas. Sister City planning is a vehicle to lay out a binational framework of cross border cooperation and collaboration of resources and manpower during a polluting incident in the border area and a communications strategy to more effectively control an emergency situation.

This document is a binational emergency response and prevention plan for the Tijuana, Baja California and the County/City of San Diego, California border area. It consists of an overview of the plan area, the identification of the hazards associated with hazardous materials during their use, handling, transportation and storage, a description of the specific elements for the activation of the Binational Mutual Aid Request, and the establishment of the Binational Emergency Response Operations under the Standardized Emergency Management System (SEMS). This plan specifically addresses the requirement under the JCP to prepare Sister City plans.

INTRODUCTION

The Binational Hazardous Materials Prevention and Emergency Response Plan among the County of San Diego, the City of San Diego, California, and the City of Tijuana, Baja California, provides a mechanism for cooperation between the United States and Mexico in response to hazardous materials incidents. These incidents may pose a significant threat to the population, environment and property within a two-mile radius, north and south of the international border. If an incident were to happen on either side of the border, and this incident were of such magnitude that it may affect the neighboring country, a notification system will be activated between the United States and Mexico. The local communication will take place between San Diego and Tijuana if notification or technical support is needed. However, communication at the federal level between the two governments will take place if personnel and equipment are needed as support to address the incident. If deemed necessary by the local government where the incident occurred that resources, personnel or equipment/instruments are needed from the neighboring country, then communication and request for these resources will take place at the federal level.

a) Purpose

The purpose of the Binational Hazardous Materials Prevention and Emergency Response Plan is to protect public health, safety and the environment in the border area through the prevention of and adequate response to hazardous materials incidents.

b) Objectives

The specific objectives of the Binational Hazardous Materials Prevention and Emergency Response Plan are:

- Identification and development of a binational database of chemical hazards associated with the use, handling, transportation, and storage of hazardous materials in the border area.
- Establishment of specific elements for the Binational Mutual Aid Request.
- Development of a reliable binational hazardous materials incident notification system.
- Establishment of roles and responsibilities of the U.S./Mexico response agencies during a binational hazardous materials emergency under the Standardized Emergency Management System (SEMS).
- Coordination of binational training, joint exercises and technical assistance.

c) Scope

The Binational Hazardous Materials Prevention and Emergency Response Plan applies to hazardous materials incidents that have the potential to affect the inland border area of the City of Tijuana and the County or City of San Diego. This area encompasses two miles north and south of the boundary between the United States and Mexico.

- Polluting incidents affecting the marine environment are covered in the MEXUSPAC Geographic Annex, of the MEXUS Plan, signed on February 26, 2003 by the Secretary of the Navy of Mexico and the United States Coast Guard. The Binational Hazardous Materials Prevention and Emergency Response Plan will coordinate with the MEXUSPAC Geographic Annex when a hazardous materials incident affects the inland border area and the coastal waters of the Pacific Ocean of both countries.
- This Plan at no time usurps existing federal, state, county, regional, or municipal plans within the jurisdictional boundary addressed by this plan.
- The initial and prime responsibility for providing immediate assistance rests with the city, county or regional government affected.

1.0 TIJUANA/SAN DIEGO BORDER REGION

1.1 General Aspects of the Region

1.1.1 Historical and Cultural Background

In 1848, the international boundary between the United States and Mexico was established across the Tijuana River Valley. A Mexican customs post was established in 1874 at the border crossing of the small town to tax trade between San Diego and Baja California. In 1906, the San Diego & Arizona Eastern railway began to construct a line from San Diego to Yuma that traversed the border. The railway was completed in 1919, stimulating growth in the area. The City of Tijuana was established in 1889 and by 1910 the population was only 700 individuals.

The current town of San Ysidro, located in the U.S. adjacent to the international border, was established in 1909. In 1916, the Hatfield flood destroyed homes and farms, forcing families to sell their holdings to the employees of the Sunset Racetrack in Tijuana. Almost overnight, San Ysidro became a tent city that accommodated a sudden influx of employees who lived in the United States and traveled to work across the border.

In the early part of the twentieth century, Tijuana had grown as an attraction for visitors from San Diego for horse racing, boxing matches, shopping, and the hot springs of Agua Caliente.

The Bracero Program began in 1942, allowing thousands of Mexicans to work in temporary agricultural jobs in the United States. Many of these individuals remained as permanent border residents after the program was terminated in 1964. In 1965, Mexico implemented the Border Industrialization Program that led to the development of the *maquiladora* (assembly plant industry), as a way to create employment along the border. By the early 1980s, *maquiladoras* emerged as the most dynamic element in Tijuana's economy. By 2000, the industry employed some 170,000 workers in Tijuana. Jobs in the *maquiladora* sector and potential employment in the United States helped attract continuing waves of migrants from central and southern Mexico, assuring the rapid growth of both Tijuana and the border area.

San Diego and Tijuana are linked inextricably by geography, history, culture and economics. The border is an environment of opportunities for both cities to share their own cultural identities through handicrafts, food, music, and education.

The migratory influx to Tijuana is the most dynamic on the U.S.-Mexico border. People from different cultural regions of Mexico have settled along the border and have developed a complexly layered cultural and social environment. Border peoples have developed distinctive styles, social organizations, and local economies.

Tijuana's literacy rate for the population over 15 years of age is one of the highest in Mexico. Tijuana schools provide students quality education to meet the demands of the highly competitive regional job market. The City of Tijuana has 17 institutions of higher education, including universities, technological institutes, and research institutes.

The City of San Diego is well known for its research and development centers. San Diego has five highly respected universities and also tops all other U.S. cities in the number of Ph.D.s per capita. The University of California at San Diego is recognized worldwide as a center for scientific learning and research. The institution ranks annually in the top 10 universities nationwide in terms of quality programs and is a leading recipient of research and development funds. Many of San Diego's biotechnology and bio-medical companies are located close to this university campus. San Diego State University is the largest California State University campus and home to the Defense Conversion Center, which focuses on industries converting from defense products to commercial products.

Ethnic and racial diversity plays a very important role in a society, providing an environment for cultural exchange. San Diego's ethnic/racial population has been changing through the years. Table 1 provides data and projections of those changes according to data from San Diego Regional Chamber of Commerce.

Table 1

San Diego County Ethnic/Racial population (%)			
	1970	*2000*	*2020*
White	83.8	59.3	48.4
Hispanic	9.1	25.0	33.6
Black	4.5	6.1	5.8
Asian/other	2.5	9.6	12.3

Source: San Diego Regional Chamber of Commerce, 2002

According to the 2000 Census, and reflecting the ethnic diversity of the city, 67% of San Diego residents speak only English, 11.4% residents speak English and Spanish, 3.8% speak English and another Asian or Pacific Island language and 2.3% of residents speak English and another Indo-European language.

1.1.2 Geographic Location

The City of Tijuana is located in Northwestern Baja California, 130 miles from the state capital of Mexicali. The city rests at an altitude of 65.61 feet (20 meters) above sea level, at 32º 32' latitude and 117º 03' longitude. The city covers 427 square miles (1,108 sq. km).

The neighboring areas of Tijuana are San Diego City and County to the north, the municipality of Tecate to the east, the Pacific Ocean to the west and the municipality of Rosarito and the Port of Ensenada to the south.

San Diego County stretches 65 miles from north to south, and 86 miles from east to west, with elevations ranging from sea level to 6,500 feet. Its latitude is 32º 45' and its longitude is 117º 10'. The County covers 4,200 square miles (10,893 sq. km). San Diego County shares common borders with Orange County to the northwest, Riverside County to the north, Imperial County to the east, and the state of Baja California to the south.

The San Diego-Tijuana region has a population of over 4 million people and forms the largest "twin-cities" on the U.S.-Mexico border. Tijuana is the most populated city in the State of Baja California and San Diego is the second most populated city in the State of California.

1.1.3 Topography and Climate

The topography of the San Diego-Tijuana area has elevations ranging from sea level on the west to more than 3,550 feet (1,082 meters) at Otay Mountain in the far east. The western region (two-thirds) is composed largely of relatively flat marine terraces comprised of conglomerate and other sedimentary rocks that are dissected by steep-sided valleys. In the west, severe erosion has left few remnants of upland areas. To the east, the urban zone of Otay Mesa-Mesa de Otay is located in a large area of relatively flat upland areas. The eastern region (one-third) is the most rugged section and is characterized by deeply dissected terrain developed on rocks that are largely igneous in nature.

The climate of the San Diego-Tijuana region is tempered by the Pacific Ocean, which results in relatively cool summers and warm winters. Temperatures below freezing are rare, while hot weather, 90 degrees and above, is more frequent. More than 80 percent of the region's rainfall occurs in the period between December and March. Average annual rainfall is approximately 9.9 inches per year.

The weather patterns in the San Diego-Tijuana area are affected by the "Marine Layer", a giant layer of air in direct contact with ocean water. This moist, cool air covers the region at night and recedes during the day, resulting in foggy or hazy mornings that usually burn off by noon.

Santa Ana winds are another local weather phenomenon. Driven down from the mountains to the east, Santa Ana winds compress as they descend to sea level, generating heat and high temperatures. Santa Ana winds generally occur in September and October, sometimes in November. The temperature often exceeds 90 degrees during these winds; however, the heat is offset by very low humidity, which often drops below 20 percent.

1.1.4 Population

Based on 2000 figures from the U.S. and Mexican Census Bureaus, the estimated cumulative population of the San Diego-Tijuana area is 4,026,065 with 2,813,833 people residing in San Diego County, and 1,212,232 people residing in the City of Tijuana.

Tijuana's population of over 1.2 million represents almost half of the State's total population. Its population grows faster than the national and the state average due to available economic and social opportunities. Most of the population is between 16 and 30 years of age. Approximately 41.76% Tijuana residents were born in the state of Baja California; 53.54% have migrated from different areas of Mexico, and 4.7% are foreign residents.

The City of Tijuana has an annual growth rate of 6.2%. According to City Planning Department forecasts, by the year 2010, the population of Tijuana will be over 2.2 million people.

San Diego County is the sixteenth largest metropolitan area in the United States with a population of over 2.8 million residents. According to information provided by U.S. Census

Bureau and the U.S. Department of Commerce, from 1990 to 2000 San Diego County increased its population by 12.6%.

The San Diego-Tijuana region is one of the most demographically dynamic of the entire U.S.-Mexico border. Based on a 2000 Census Bureau ranking of metropolitan areas, and summarized by the Greater San Diego Chamber of Commerce, the San Diego-Tijuana area holds eighth place for population in the United States.

Table 2 provides data and projections for population growth in the binational San Diego-Tijuana region:

Table 2 POPULATION

	1990	2000	2010
Tijuana, B.C.	747,384	1,212,232	2,255,833
San Diego, California	1,110,549	1,223,400	1,499,437
San Diego County	2,498,016	2,813,833	3,437,700

Source: U.S. Census Bureau: 2000 Census
INEGI México: 2000 Data
*Projections from SDSU IRSC

1.1.5 Economy

The San Diego regional economy continues to undergo a dynamic transformation propelled by high-technology companies that compete in international markets. These high-technology firms produce products and services most in demand in the global economy. San Diego has experienced economic development in the defense industry, as well as the biotechnology, aerospace, electronics and computer industries. Based on information from the San Diego Regional Chamber of Commerce, San Diego's high technology economy in 2002 is distributed as follows: 19% aerospace/defense, 19% telecommunications, 18% bioscience, 13% electronics, 10% computers/peripherals, 9% software, and 12% other high-tech. These sectors account for 148,500 jobs in San Diego County.

The multi-billion dollar visitor industry has also been an important sector of economic power and stability in San Diego. The visitor industry is San Diego's third largest economic sector, behind only manufacturing and military/defense.

The City of Tijuana has grown into an important manufacturing center with 794 *maquiladoras*, employing more than 193,118 workers, according to the information from 2000 Census (INEGI).

However, a slowdown in the U.S. economy, coupled with a growing number of operations being moved to Asia, has contributed to decrease in the number of *maquiladoras* in Tijuana over the past two years. Based on information from the Maquiladora Industry Association (AIM), the number of manufacturing companies in Tijuana in May 2002 was 644, with 147,509 workers employed in the sector.

Tijuana's economic base is comprised of trade, tourism and manufacturing, primarily. Based on the information from the Public Registry of Property and Commerce, Tijuana's business sector consists of 35% commerce services, 24% manufacturing, 18% transportation, 5% agriculture, 5% construction, 3% mining and 10% other.

2.0 REGIONAL INFRASTRUCTURE

2.1 Transportation

2.1.1 Roads

Tijuana

Tijuana is connected to the rest of Mexico by the Mexico-Nogales Highway 2, and to the rest of Baja California with the trans-peninsular Highways 1 and 3. Its proximity to San Diego enables immediate access to the State of California and North America. There is also the Tijuana/Tecate/Mexicali toll road, which connects Tijuana to those cities, following the California/Baja California border.

In the City of Tijuana, six roads carrying high volumes of traffic connect the area of La Mesa to the River Zone: Boulevard Cuauhtémoc, Acceso Otay-Buena Vista, Boulevard Lázaro Cárdenas Poniente, Boulevard Lázaro Cárdenas Oriente, Boulevard Manuel J. Clouthier, and Boulevard Héroes de la Independencia-Boulevard Héctor Terán Terán. The historic urban core of Tijuana, the area adjacent to Avenida Revolución, is connected to the Avenida Revolución-Boulevard Agua Caliente-Boulevard Díaz Ordaz corridor. This corridor, characterized by commercial strip development, has a very heavy volume of public transportation. With no overpasses to speed cross traffic, the route is considerably congested. The Paseo de los Héroes and vías rápidas (expressways) provide additional road capacity parallel to this route. The connection of the Zona Centro with Playas de Tijuana to the west is by the four-lane limited access *Autopista Playas* that traverses the difficult topography of the western hills. The Playas de Tijuana and Otay Mesa sectors are connected by congested surface streets that traverse the Zona Centro and a beltway, the Libramiento Oriente and Libramiento Sur, that loops around the city to the south.

San Diego

San Diego County has four major interstate freeways and six state highways. Among them, Interstate 5 runs north-south and connects the northwest of the United States to Canada and the southwest to Mexico; Interstate 8 runs east-west and connects coastal areas of San Diego eastward to Arizona; Interstate 15 runs north-south parallel to I-5 and connects the northwest of the United States to Canada and the inland southern region of the county. Interstate 805 runs north-south and connects the inland areas of San Diego, National City and Chula Vista.

Highway 905 connects Otay Mesa to I-5 and I-805. Highway 54 runs east-west and connects I-5 to the southeastern region of the city.

2.1.2 Media

The San Diego/Tijuana region has an extensive array of media, including print, radio and television. Many of these sources provide coverage to both sides of the international border, and several are in Spanish.

Tijuana

In the City of Tijuana, there are nine television stations. With regard to print media, there are four main daily newspapers and some weekly publications. There are 14 AM radio stations and 16 FM radio stations in Tijuana.

San Diego

In San Diego County, there are 12 television stations (non-cable) and 10 cable television stations. With regard to print media, there are three main daily newspapers and numerous weekly and monthly publications. There are 13 AM radio stations and 24 FM radio stations in San Diego County.

2.1.3 Railroads

Tijuana

The city of Tijuana offers daily rail freight service to and from the Ports of San Diego and Los Angeles via the SD&IV (San Diego-Imperial Valley Rail System). Additionally, the Amtrak station in San Diego, located only 20 minutes away, offers 20 daily passenger trips to and from Los Angeles. The railroad station is connected by trolley to the San Ysidro Border Crossing facilitating commuter traffic between the two cities.

Mexicali, two and a half hours distant from Tijuana, has connecting rail routes via the Mexican National Rail System to every destination in Mexico.

San Diego

The State of California finances operation of the Pacific Surfliner route, which lies in a generally northwest by southwest direction along the Pacific Coast of California, connecting the cities of San Diego, Los Angeles, Oxnard, Santa Barbara, and San Luis Obispo.

Amtrak California Pacific Surfliners operate seven days per week with 11 daily round-trips between San Diego and Los Angeles; one round trip each day operates between San Luis Obispo and San Diego, while another round trip per day operates between Santa Barbara and San Diego.

Commercial rail activity is primarily comprised of automobiles and lumber. Historically, soda ash has also been shipped by rail, but this activity was recently moved to the Port of Long Beach.

2.1.4 Airports

Tijuana

The City of Tijuana is served by the Abelardo L. Rodriguez International Airport, located in Mesa de Otay and adjacent to the international border in Otay Mesa. It is the busiest airport in northwestern Mexico with six airlines offering national flights throughout Mexico and 125 daily flights, including daily service to Los Angeles, CA and Las Vegas, NV.

San Diego

The Port of San Diego operates the San Diego International Airport-Lindbergh Field providing international and commercial air service for the region. Lindbergh Field hosts 20 passenger airlines and 17 air freight carriers. In 2001, the airport had a total of 206,988 operations. Of these, 148,280 were air carriers, 43,808 were air commuters, 13,396 were civil and 1,504 military.

The City of San Diego operates two general aviation airports, Brown Field one mile north of the U.S.-Mexico border, and Montgomery Field located in the Kearny Mesa area of the city.

Brown Field airport is a port of entry into the United States for private aircraft coming from Mexico into California. Brown Field is also heavily used by military and law enforcement agencies. The control tower operates daily from 8 a.m. to 8 p.m.

2.1.5 Maritime Ports

Tijuana

Having no seaport of its own, the City of Tijuana is served by the Port of San Diego, the Port of San Pedro in Los Angeles, and the Port of Ensenada. Import-export shipments are scheduled weekly to Yokohama and Kobe, Japan; Hong Kong, China; Kaohsiung, Taiwan; and South Korea. Transfer shipments are available to Singapore and Pennang. South American countries such as Panama, Guatemala and Chile can also be reached through the Port of Ensenada.

San Diego

San Diego Bay is an uncongested harbor located about 96 nautical miles southeast of Los Angeles and just north of the U.S./Mexico border. It is only a few miles from Tijuana, and is 135 miles from Mexicali.

The Port operates two marine cargo facilities, the Tenth Avenue Marine Terminal and the National City Marine Terminal. Also, the Port owns the B Street Cruise Ship Terminal.

The cargo terminals have on-dock rail facilities for rapid transfer of cargo to rail and are minutes from Interstate 5, 8 and 15 for truck transportation. Terminal gates are operated 24 hours a day. The terminals are located 15 miles from the border crossing between the United States and Mexico.

The Tenth Avenue Marine Terminal is a 96-acre, multi-purpose facility offering modern dockside cool/frozen storage, break bulk, dry/liquid bulk, small-scale container operations and warehousing services. The principal inbound cargoes are refrigerated commodities, fertilizer, cement, break-bulk commodities, and forest products. The primary export cargoes include refrigerated cargo, break bulk and bulk commodities.

IMC Chemicals, Inc. (IMC) operates a state-of-the-art bulk loader at this terminal. The loader, rated as one of the world's most efficient at 2,000 tons per hour, is used to export soda ash, sodium sulfate, borax, pyroborates, bicarbonate of soda and other bulk commodities.

The National City Marine Terminal is a 125-acre complex and a primary port of entry for Honda, Acura, Volkswagen, Isuzu, Mitsubishi Fuso, and Hino motor vehicles. The terminal is capable of handling well over 300,000 vehicles per year.

The B Street Cruise Ship Terminal is located on B street Pier, between the foot of Broadway and A Street in downtown San Diego. The facility is equipped to handle embarkation and debarkation of passengers and baggage with a 35,000 sq. ft. passenger reception and baggage handling area and a rated capacity of 3,419 persons.

2.2 Water and Sewage Infrastructure

2.2.1 Water

Tijuana

Tijuana's potable water and sewage services are operated by the State Commission for Public Services for Tijuana (Comisión Estatal de Servicios Públicos de Tijuana, CESPT). Tijuana is supplied with water from the Rodríguez Reservoir, with water transported from the Colorado River by an aqueduct, and by wells in La Misión located south of Tijuana on the coast. In addition, a small, but critical portion of Tijuana's water is supplied by the wells in the Río Alamar and Río Tijuana. Efforts are underway to protect these sources and maximize groundwater recharge. Water from the Rodríguez Reservoir and the Colorado aqueduct is treated at the filtration plant at El Florido. The water is distributed throughout Tijuana via two main systems: (1) the Mesa de Otay tank, and (2) the Aguaje de la Tuna tank. Water distributed through the system of mains and supply lines reaches approximately 85% of Tijuana's population. The remainder is serviced through deliveries by tank trucks (*pipas*) at a cost that is two to three times that of piped-in water. According to CESPT, 95% of the city will have access to water supply by the year 2003, and four new water treatment plants will be completed by then.

San Diego

San Diego is located in the semi-arid desert region of the southwestern United States where rainfall can vary from nil one year to plentiful the next. During a normal year about 10-20 percent of the City's water supply is made up of local rainfall and is captured in reservoirs. The remaining 80-90 percent is imported via the Metropolitan Water District of Southern California (MWD) and the San Diego County Water District Authority (CWA) from two separate sources: the Colorado River Aqueduct (CRA) and the State Water Project (SWP).

The Metropolitan Water District built the Colorado River Aqueduct to convey water from the Colorado River. The aqueduct is more than 242 miles long, beginning at Lake Havasu on the Arizona/California border and ending at Lake Mathews in Riverside County. The aqueduct has the capacity to deliver up to 1.3 million acre-feet (MAF) each year.

San Diego also receives water that originates in Northern California from the State Water Project. This water is captured in reservoirs north of Sacramento and released through natural rivers and streams into the Sacramento-San Joaquin River Delta (Delta). The 444-mile-long California aqueduct carries the water from south of the Delta to southern California.

The MWD blends Colorado and State Project water for San Diego to achieve the highest quality for treatment and taste. The water is then transferred to the San Diego treatment plants at Miramar, Alvarado and Otay reservoirs, via pipelines operated by CWA.

The Miramar Water Treatment Plant is the sole provider of drinking water to an estimated 500,000 customers in the northern section of the City of San Diego. The plant is located in the Scripps Miramar Ranch community on the shore of Miramar Lake. Currently the plant produces 140 million gallons of water a day (mgd).

The Alvarado Water Treatment Plant is located adjacent to Lake Murray near the City's border with La Mesa. Currently the plant processes 120 million gallons of water a day, and potable water demand, at times, exceeds available capacity.

The Otay Water Treatment Plant provides up to 34 million gallons per day of potable water to customers primarily in the southern reaches of the City. The treatment plant obtains its water from the Morena, Barrett and Lower Otay Reservoirs.

2.2.2 Sewage

Tijuana

The downtown areas of Mesa de Otay and Zona Centro are served by a system of collectors that transports sewage by gravity from the hills and mesas to main collectors in the Tijuana River Valley. From there, the sewage is transported to Pump Station 1, located at the low spot in Tijuana's collector system, which is adjacent to the International Wastewater Treatment Plant. There is also an interceptor located in the Tijuana River channel that diverts renegade sewage to the pump station and collector system. Most of the Zona Centro has sewage service, but coverage on Mesa de Otay is incomplete, particularly in the growing squatter settlements in the eastern portion of this area. From Pump Station 1, the sewage is pumped up over a series of hills to the ridge above Playas de Tijuana where it enters an open canal and is transported some 3.1 miles (5 kilometers) south to the treatment plant at San Antonio de los Buenos. Another pump station lifts sewage from the area of Playas de Tijuana adjacent to the ocean to the conveyance canal to San Antonio de los Buenos.

San Diego

In the City of San Diego, the wastewater is collected from residents and businesses in the Metropolitan Sewerage system and it is conveyed through pipelines to the Point Loma Wastewater Treatment Plant and the North City Water Reclamation Plant.

The Point Loma Wastewater Treatment Plant (PLWTP) treats up to 190 million gallons of wastewater per day from a 450 square mile area. The PLWTP is energy self-sufficient, using the methane produced at the plant during the wastewater treatment process to generate electricity at the plant’s gas utilization facility.

The South Bay International Wastewater Treatment Plant (SBIWTP) is a 25 million gallon per day advanced primary treatment plant located in San Diego County, about 2 miles west of the

San Ysidro Port of Entry. The physical-chemical plant treats sewage originating in Tijuana, Mexico and discharges it to the Pacific Ocean through the South Bay Ocean Outfall, a four and one-half mile long, 11 foot diameter pipe completed in January 1999.

The new South Bay Water Reclamation Plant is currently in a test mode and will provide local wastewater treatment services and reclaimed water. The plant has a wastewater treatment capacity of up to 15 million gallons per day. It is located at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley. However, it is expected to process seven million gallons per day.

The North City Water Reclamation Plant (NCWRP) can treat up to 30 million gallons of wastewater per day generated by northern San Diego communities. Wastewater entering the plant undergoes a series of treatment and disinfection steps, using the latest technology, to supplement the water supply of the region. Reclaimed water is distributed throughout the northern region of San Diego via an extensive pipeline system.

2.2.3 Electricity/Natural Gas

Tijuana

Electricity for the city of Tijuana is generated by two thermoelectric plants: one located in Rosarito and the other in Mexicali (Cerro Prieto), both of which are operated by the Federal Electrical Commission (CFE). Total combined electric energy supply is over 1,895 MW. Tijuana's distribution system includes three high voltage stations and 19 substations. In addition, by the year 2004 there will be eight new substations and one new high voltage station.

A 30-inch (76.2 cm), 23-mile (38 km) long natural gas pipeline has been built to feed the Presidente Juarez Thermoelectric power plant in Rosarito. The Rosarito pipeline has a capacity of transporting 500 mcfd (million cubic feet per day). The pipeline is operated by Transportadora de Gas Natural (TGN) in a joint venture between Sempra Energy and Proxima Gas, a consortium of Mexicali businesses.

A second pipeline, Gasoducto Baja Norte brings natural gas from the State of Arizona, with an additional 500 million cubic feet per day of capacity. The Baja Norte pipeline crosses the southeast border of California and the State of Baja California to connect with the existing Rosarito pipeline. The Baja Norte pipeline is 145-mile (242 km) long and 30-inch (76.2 cm) wide. The pipeline serves new and existing power plants and industrial customers in northern Baja California and Southern California. It is also a joint venture between Sempra Energy and Proxima Gas.

San Diego

Electricity in San Diego is supplied by San Diego Gas & Electric (SDG&E), which is a regulated public utility that provides service to 3 million consumers through 1.3 million electric meters and 775,000 natural gas meters in San Diego and Southern Orange counties. The company’s service area spans 4,100 square miles, covering two counties and 25 cities.

3.0 LAWS AND REGULATIONS

3.1 Authority

This plan was developed in accordance with the following federal, state, and local statutes and agreements for both countries.

3.1.1 Laws and Statutes

3.1.1.1 Laws and Statutes in the United States

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 42 U.S.C. § 9601 *et seq.*

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (Title III of Superfund Amendments and Reauthorization Act (SARA) of 1986), 42 U.S.C. § 11001 *et seq*.

Clean Water Act, 33 U.S.C. § 1251 *et seq.*

California Health and Safety Code, Division 20, Chapter 6.95, Hazardous Materials Release Response Plans and Inventory.

California Vehicle Code, Division 2, Chapter 2, Article 4, Highway Spill Containment and Abatement of Hazardous Substances.

3.1.1.2 Laws and Statutes in Mexico

The General Law of Ecological Balance and Environmental Protection (Published January 28, 1988 and amended on December 13, 1996).

Environmental Protection Law for the State of Baja California (Published November 30, 2001).

The General Law of Civil Protection (Published May, 2000).

Civil Protection Law for the State of Baja California (Published January 16, 1998).

3.1.2 Regulations

3.1.2.1 Regulations in the United States

40 Code of Federal Regulations, Part 300, National Oil and Hazardous Substances Pollution Contingency Plan (2000).

29 Code of Federal Regulations, Part 1910.120, Hazardous Waste Operations and Emergency Response (2000).

29 Code of Federal Regulations, Part 1910.38, Employee Emergency Plans and Fire Prevention Plans (2000).

California Code of Regulations, Title 8, Section 5192, Hazardous Waste Operations and Emergency Response (amended January 1, 2001).

California Code of Regulations, Title 19, Division 2, Chapter 4.5, California Accidental Release Prevention (CalARP)

3.1.2.2 Regulations in Mexico

Bylaw of the General Law of Ecological Balance and Environmental Protection concerning Hazardous Waste (Published November 25, 1988).

Bylaw for the Transport of Hazardous Materials and Hazardous Waste by Land (Published April 7, 1993).

Federal Regulation for Safety, Hygiene, and Environment in the Workplace (Published January 21, 1997).

Bylaw of the Law of Ecological Balance and Environmental Protection for the State of Baja California concerning Prevention and Control of Contamination of Water, Soil, and the Atmosphere (Published December 10, 1993).

Bylaw of the Prevention and Control of Fires and Disasters for Public Safety in the Municipality of Tijuana, Baja California (Published March 24, 2000).

Bylaw of Environmental Protection for the Municipality of Tijuana, Baja California (May 11, 2001).

3.1.3 Binational Agreements

Agreement Between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area (La Paz Agreement) (August 14, 1983).

Annex II to the Agreement (July 18, 1985, revised June 1999) is the foundation for the development of the Joint Contingency Plan.

3.2 Other Applicable Contingency Plans

Sections of the agreements and plans described below were adapted for use in various components of this plan.

3.2.1 Binational Contingency Plans

The United States-Mexico Joint Contingency Plan (JCP) for Preparedness for and Response to Environmental Emergencies Caused by Releases, Spills, Fires or Explosions of Hazardous Substances in the Inland Border Area (June 4, 1999).

The MEXUS PLAN (February 2000) is the Joint Contingency Plan between the United Mexican States and the United States of America regarding pollution of the marine environment by

discharges of hydrocarbons or other hazardous substances. It provides standard operational procedures in case of pollution incidents that may represent a threat to the coastal waters or the marine environment of the border zone of both countries.

The MEXUS PLAN has a Geographic Annex, the MEXUSPAC, which defines the applicable regional coordination for the coastal waters of the Pacific Ocean of both countries. The Geographic Annex was signed on February 26, 2003 by the Secretary of the Navy of Mexico and the United States Coast Guard.

Joint United States of America - United Mexican States Contingency Plan for Accidental Releases of Hazardous Substances along the Border (1988).

The Joint Response Team (JRT) is an entity authorized by Annex II of the La Paz Agreement to undertake emergency actions to respond to accidental oil and hazardous materials spills along the 62.2-mile (100-km) wide area on either side of the U.S.-Mexico border, and to coordinate international hazardous materials preparedness and response activities in this area. The JRT developed the JCP to respond to spills requiring international coordination between the United States and Mexico.

3.2.2 Mexico Contingency Plans

3.2.2.1 Local and Regional Plans and Mutual Aid Agreements

The Municipal Contingency Plan for the City of Tijuana (April 2000) provides guidelines to ensure an effective response to emergency situations caused by natural or man-made disasters. The plan addresses duties of government agencies and organizations, operating procedures, and coordination of resources during an emergency response. The Civil Protection Administration has developed the Annexes of the plan for Geological Risks and Hydro-meteorological Risks and is currently developing the plan for chemical risks.

The Municipal Civil Protection Agency has developed the 2000 Risk Atlas for the Municipality of Tijuana, B.C., version 1.0, which is a tool for emergency response planning actions. The Risk Atlas contains the geological, hydro-meteorological, socio-organizational, chemical and sanitary risk evaluation.

3.2.2.2 State of Baja California Plans

The Contingency Plan for the State of Baja California is currently in process of development by the Civil Protection Agency.

3.2.2.3 Federal Plans

Technical Guide for Developing Municipal Contingency Plans (Protección Civil): (Revised 1998). This guidebook was published by the General Directorate of Civil Protection of the Mexican Federal Government in 1993. It provides guidelines for implementing local emergency plans in Mexico, in response to natural or man-made disasters. These plans are based on the identification and evaluation of local hazards, availability of human and material resources, and preparation and capabilities of the local community. Hazards are classified as: geological, hydrological/ meteorological, chemical, sanitary, or socio-organizational. Contingency plans are

not yet mandatory by law in Mexico; however, Civil Protection strongly recommends each state and municipality have one.

National Civil Protection System. The Department of the Interior of the Mexican Federal Government approved on May 6, 1986 the basis to establish the National Civil Protection System, which has as a main objective to protect persons and the community in case of a disaster caused by natural or human agents.

In order to fulfill the objectives of the National Civil Protection System, there is the National Civil Protection Program that describes the objectives, policies, strategies, action lines and goals. The National Program is currently in force for the 2001-2006 period.

DN III-E Plan for Community Assistance. This plan, established by the Secretariat of National Defense, is an active military instrument that establishes the role of the Mexican Army and Air Force to carry out support activities to the community affected by any type of disaster.

Manual of Emergency Attention for Hydroecological Emergencies Related to Continental National Waters (2000). Civil Protection implements this plan in the event of a flood, hurricane or other severe storm. This plan is updated annually.

3.2.3 United States Contingency Plans

3.2.3.1 Local and Regional Plans and Mutual Aid Agreements

The San Diego County Operational Area Emergency Plan (March 2000) describes a comprehensive emergency management system which provides for a planned response to disaster situations associated with natural disasters, technological incidents, and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization, and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population.

In addition, there are four stand-alone emergency plans: 1) San Diego County Nuclear Power Station Emergency Response Plan; 2) San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan; 3) San Diego County Operational Area Emergency Water Contingencies Plan; and 4) Unified San Diego County Emergency Services Organization Operational Area Energy Shortage Response Plan.

3.2.3.2 State of California Plans

The State of California Emergency Plan (May 1998) establishes a system for coordinating all phases of an emergency in California. The plan provides a description of the California Emergency Organization and of mutual aid to be used during emergencies to ensure effective coordination of resources. It describes interagency and intergovernmental shared responsibilities and support capabilities. The plan includes general policies to guide emergency management activities.

The State of California Hazardous Materials Incident Contingency Plan (HMICP) was originally published in November of 1982, and later revised and published in January of 1991. The HMICP has been modified since the last publication. The latest draft was published on May 30, 1999.

The HMICP provides an integrated and effective procedure to respond to the occurrence of toxic disasters within the state. The Plan was prepared and edited by the Governor's Office of Emergency Services.

3.2.3.3 Federal Plans

National Contingency Plan (revised 1997). The National Response Team (NRT) developed the National Contingency Plan (NCP) for responding to releases or spills involving oil or hazardous materials throughout the United States.

U.S. EPA Region IX - Mainland Regional Contingency Plan (revised 2000). The U.S. Environmental Protection Agency (U.S. EPA) Region IX Regional Response Team (RRT) has developed a Contingency Plan, which outlines procedures in the event of a release or spill occurring in the States of Arizona, California, or Nevada.

4.0 HAZARDS IDENTIFICATION

This section identifies the hazards associated with hazardous materials during use, handling and storage on site, during transportation, and at the Otay Mesa Port of entry within a two-mile radius from the international border based on the geographic scope defined for binational emergency response for hazardous contingencies.

4.1 Businesses Using, Handling or Storing Hazardous Materials (Fixed Facilities)

This section presents the hazards posed by fixed facilities, which use, handle or store hazardous materials in the County of San Diego, California and the City of Tijuana, Baja California.

For the purpose of the plan, this section includes only general information about the hazardous materials handled by the facilities on both sides of the international border. As a separate document, a detailed inventory will be generated, updated, and exchanged every six months between the Tijuana Fire Department and the San Diego County Department of Environmental Health, Hazardous Materials Division. This information will be provided on compact disk in a Microsoft Access program. It will include location specific information, types of chemicals, and descriptions of the hazardous materials used or stored on site, as well as their quantities.

4.1.1 Hazards Analysis

Tijuana

The City of Tijuana comprises six sectors, known as *delegaciones*: Playas de Tijuana, Centro, San Antonio de Los Buenos, Otay Mesa, La Mesa, and La Presa. Map 2 shows the land uses in the Municipality of Tijuana.

Based on information obtained from the Risk Atlas for the Municipality of Tijuana dated March 2000, version 1.0, provided by Municipal Civil Protection, the types of high-risk facilities located at the border are: hazardous materials and hazardous waste transportation, airport services, storage and distribution of LP gas, food product processing, and fabricated metal products industries. In this section, the hazards analysis focuses on high risk industries within the scope of the plan.

The determination of activities considered high risk is based on the properties of the hazardous substances and the reporting amounts. The amount reported is the minimum amount of hazardous substance in production, processing, transportation, storage, use or final disposal, or their sum, available in a given facility or means of transportation, that when released would have a negative impact on the environment, the population or property.

The General Law of Ecological Balance and Environmental Protection considers the regulation of high-risk activities based on two published listings:

1) The first listing of high-risk activities corresponds to facilities that handle *toxic substances* in volumes equal to, or higher than the reporting amounts published in the Federal Gazette on March 28, 1990.

2) The second listing of high risk activities corresponds to facilities that manage *flammable and explosive substances* in volumes that are equal to, or higher than the reporting amounts published in the Federal Gazette on May 4, 1992.

Table 3 shows the types of businesses located in Tijuana within two miles of the U.S.-Mexico border that fall within these categories, and the number of businesses handling chemicals in each category.

Table 3

Type of Facilities	# of Facilities	Type of Hazards	Quantities
Storage/distribution of LPG	2	Fire Explosion	50,000 kg
Food product processing	16	Fire Waste	Minimum amount 1 kg
Ice manufacturing and sales	2	Fire Pressure release of ammonia	Minimum amount 10 kg or more
Slaughter and temporary storage of bovine cattle	1	Waste	1 kg or more
Buy-sale of welding fuels	1	Fire Waste	Minimum amount 1 kg or more
Airport services	1	Waste	1 kg or more
Sale of chemical products	5	Explosion Spill Waste	Minimum amount Minimum amount 1 kg or more
Electroplating	1	Fire Waste	Minimum amount 1 kg or more
Industrial gas distribution	1	Explosion Fire	1-100 kg 1-100 kg
Hazardous waste transportation	3	Spill	0.5 lt or more
Manufacturing of latex products	1	Fire Waste	Minimum amount 1 kg or more
Metal polishing	1	Waste	1 kg or more
Hazardous waste recycling	3	Spill Waste	Minimum amount 1 kg or more
Melting of scrap	19	Fire Waste	Minimum amount 1 kg or more
Manufacturing of ophthalmic lenses	1	Waste Fire	1 kg or more Minimum amount
Others	58	Waste Fire	1 kg or more Minimum amount

Source: The Risk Atlas for the Municipality of Tijuana, first and second listing of high-risk activities (LGEEPA), and Emergency Response Guidebook, 2000

San Diego

San Diego County comprises 18 cities and unincorporated areas. The cities are: Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista.

Based on information provided by the San Diego County Department of Environmental Health, Hazardous Materials Division, regulated businesses operating within the two-mile radius include a variety of industrial and commercial activities, handling various hazardous materials. The zip codes used for border communities that are included in this analysis are: 92154; 92173; 91905; 91906; 91917; 91932; 91934; 91963; and 91980.

Among the most prominent relevant activities in the border area are: auto wrecking/scrap yards; general auto repair; auto body repair; construction/painting contractors; resin manufacturers and users; machine shops/metal working activities; and retail gasoline stations. Some of this activity is to support the maquiladora industry.

In this section, the hazards analysis focuses on activities requiring a Hazardous Materials Business Plan. A brief description of the regulation is as follows:

Hazardous Materials Business Plan: According to the California Health and Safety Code, Division 20, Chapter 6.95, each business shall prepare a Business Plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount
- Hazardous waste in any quantity (to meet the requirements for emergency contingency plans)

Table 4 shows the types of businesses in San Diego located within two miles of the U.S.-Mexico border that fall within these categories and the number of businesses handling chemicals in each category.

Table 4

Type of Facility	# of Fac	Type of Hazards	Quantity
Small quantity medical waste generators	31	Waste	3-60 gal 1-200 lbs
Small quantity medical waste generators that treat onsite	3	Waste	12-25 gal 10-120 lbs
Photo waste only	8	Waste	1-60 gal

Type of Facility	# of Fac	Type of Hazards	Quantity
Various businesses that have only one waste or hazmat on site	124	Acute Chronic Fire Pressure release Reactive Waste	73-900 lbs 5-5 gal 900-900 lbs 12-20785 cft 150-30000 gal 5760-5760 cft 62-750 gal 1-114400 gal 10-13650 lbs
Activity code to be assigned	22	*	*
Fuel dispensing USTs without Service Bays	5	Fire Waste	499-12000 gal 20-440 gal 240 lbs
Fuel dispensing USTs with Auto Repair Work	3	Fire Waste	165-20000 gal 60-500 gal 1-2400 lbs
General Automotive/Motorcycle/Truck Repair	62	Acute Chronic Fire Pressure release Waste	55-200 gal 251-440 cft 1550-550 gal 55-24000gal 220-3400 cft 250-1143 cft 600-600 gal 32 cft 1-18000 gal 20-15600 lbs 40 ton
Auto Truck Repair	5	Fire Pressure release Waste	55-2592 cft 305-4940 cft 10-550 gal 20-400 lbs
Retail Gasoline Stations without repair	41	Fire Pressure release Waste	250-20000 gal 200-400 gal 400-400 lbs 30-200 gal 5-600 lbs
Retail Gasoline Stations with repair	15	Acute Fire Pressure release Waste	60-60 gal 150-20000 gal 250-680 cft 200-400 gal 2-1800 gal 20-14700 lbs
Car Washes	1	Fire Waste	60-60 gal 495 gal

Type of Facility	# of Fac	Type of Hazards	Quantity
Wrecking/Scrap Yards	51	Acute Fire Pressure release Waste	55-2000 gal 175-37000 cft 250-250 cft 15-14560 gal 20-49000 lbs
Machine Shops/Metal Working Activities	7	Acute Chronic Fire Pressure release Reactive Waste	20-20 ton 55-8450 gal 484-14491 lbs 55-55 gal 988-988 lbs 55-8065 gal 558-12000 cft 219-25512 cft 384-384 lbs 900-900 gal 1036-1036 lbs 6-9470 gal 110-10496 lbs
Printed Circuit Boards Manufacturers	2	Fire Waste	65-90 gal 1700-2900 lbs
Commercial Print Shops	2	Acute Chronic Fire Waste	110-110 gal 55-55 gal 55-110 gal 600-600 lbs 1152-1728 cft 15-160 gal 40 lbs
General Farming	2	Acute Chronic Fire Waste	2-9 ton 55-100 gal 1470-1470 lbs 2000-2000 ton 4-4 ton 250-1728 cft 200 gal 1200 lbs
Businesses engaged in maintenance, assembling of various products	2	Acute Fire Pressure release Waste	55-110 gal 55-12000 gal 460-1000 cft 1610-1610 cft 8-60 gal 30-75 lbs

Type of Facility	# of Fac	Type of Hazards	Quantity
Public utilities	14	Acute	110-83000 gal
			46000-96000 lbs
		Fire	55-220000 gal
		Pressure release	249-600 cft
		Reactive	180-180 ton
			1000-1000 gal
		Waste	5-12000 gal
			1-3200 lbs
Dry cleaning shops	4	Acute	40-130 gal
		Fire	600-600 gal
		Waste	165-330 gal
			20-1600 lbs
Primary and Secondary schools	6	Acute	55-2000 gal
			243-2800 lbs
		Chronic	57-4000 gal
		Fire	55-20000 gal
			220-2202 cft
			1000-1245 lbs
		Pressure release	240-240 gal
			400-7470 cft
		Reactive	150-150 gal
			1025-1192 lbs
		Waste	2-630 gal
			5-4711 lbs
Medical / Health Related	5	Acute	60-75 gal
		Chronic	1390-1390 gal
		Fire	1000-1050 cft
		Pressure release	1542-22578 cft
		Waste	10 gal
			5-20000 lbs
Chemical Suppliers	1	Acute	329-13071 gal
			500-150945 lbs
		Fire	55-214 gal
			2400-2400 cft
		Waste	0

Type of Facility	# of Fac	Type of Hazards	Quantity
Contractors	41	Acute	55-9000 gal
			100-100 lbs
			250-250 cft
		Chronic	55-1500 gal
		Fire	55-60000 gal
			220-11004 cft
			500-1000 lbs
		Pressure release	260-4952 cft
			1100-25000 lbs
			20000-750240 gal
		Reactive	55-110 gal
		Waste	1-5400 gal
			10-5400 lbs
			2-480 ton
Furniture Manufacturers	4	Acute	55-100 gal
		Fire	55-110 gal
			499-1168 cft
		Pressure release	100-100 gal
			502-502 cft
		Waste	45-165 gal
			1000-3200 lbs
Food Processing/Wholesale, simple	1	Acute	90-1500 gal
			425-425 lbs
		Fire	30-220 gal
			500-500 cft
		Pressure release	500-128000 lbs
		Waste	9-7000 gal
			40-670 lbs
			6 ton
Chemical/Industrial Gas/Paint Manufacturers	2	Acute	55-6000 gal
			475-475 lbs
		Fire	55-740 gal
			1500-1500 lbs
		Waste	55-1430 gal

Type of Facility	# of Fac	Type of Hazards	Quantity
Resin Manufacturers/Users	9	Acute	55-605 gal 1250-27200 lbs
		Fire	3-3 ton 8-2000 gal 251-20980 cft 1000-1763000 lbs
		Pressure release	13-13 ton 129-1095 cft
		Reactive	40-12000 gal
		Waste	30-2255 gal 30-12000 lbs
Petroleum, Propane, and Fuel Suppliers	2	Waste	90 gal
Industrial Gas Suppliers	1	Fire	55-50000 gal 300-130000 cft
		Pressure release	3600-3600 cft 16000-50000 gal
		Waste	55-700 gal 300-750 lbs
Total	**476**		

Source: San Diego County Department of Environmental Health, Hazardous Materials Division. March 27, 2003.

* These facilities have submitted documentation to the County of San Diego, Department of Environmental Health to be under permit. Status pending.

Definition of Hazards: According to 40 CFR 370.2:

- Fire: Flammable liquids and solids, combustible liquids, pyrophorics and oxidizers.
- Reactive: Unstable reactive, organic peroxides, water reactive, radioactive.
- Pressure release: Explosives, compressed gases, blasting agents.
- Acute health (immediate): Highly toxic, toxic, irritants, sensitizers, corrosives, other hazardous chemicals with an adverse effect with short term exposure.
- Chronic health (delayed): Carcinogens, other hazardous chemicals with an adverse effect with long-term exposure.

4.1.2 Recycling Centers

In addition to the facilities described above that handle hazardous materials and are required to provide inventories to regulating authorities, there are other facilities in the plan area that pose hazmat risks. For example, there are recyclers in the plan area that collect various paper, plastics and organic materials from border industry in Mexico and store them on site. There are four recycling centers within the Plan area on the U.S. side. They provide service to the Otay Mesa and Tijuana area. The types of the materials collected by these recyclers are paper, cardboard, wood waste, green waste, glass, metals and plastics.

Mexican authorities will provide information for this section.

In addition to recycling centers, used tire pile sites are also potential hazards. Tire pile fires are very toxic and can have severe impacts on the environment and the nearby population. There are presently no active sites on the U.S. side of the border.

Mexican authorities will provide information for this section.

4.2 Risks Associated with Transportation

This section identifies risks associated with hazardous materials during their transportation in Tijuana, Baja California and in the County/City of San Diego, California.

4.2.1 Roads

Tijuana

The transportation of hazardous materials and wastes through general roadways is regulated by the April 7, 1993 Hazardous Materials and Waste Land Transportation Regulation. This regulation addresses: labeling, container and packaging characteristics used to transport materials or wastes; characteristics and specifications for vehicles used to transport materials and wastes; safety conditions and inspection of transportation units; handling and packing of load; required documentation; and other specifics.

Within the documentation required, the transporter of hazardous materials and wastes should have "Transportation Emergency Information," which should be implemented in case of an incident. This information should state the actions to be taken according to the hazardous material or waste being transported. In addition, the driver and personnel involved in transporting hazardous materials or wastes should have specific training and corresponding updates. The training programs should be authorized by the Secretariat of the Environment and Natural Resources and by the Secretariat of Labor and Social Security.

When hazardous materials and wastes are transported within Municipality of Tijuana city limits, the person contracting the transportation services, the transporter and the addressee, should coordinate to determine the route and transportation schedule that offers the best safety conditions, notifying the Municipal Ecology Office in writing. If there are no concerns, this agency will issue an authorization and will state that the driver of the unit will not make any stops that are not necessary to provide the service, and will avoid downtown areas, in favor of outlying streets.

If the hazardous materials and/or wastes are transported outside the Municipality limits, the route and schedule should be submitted to the Secretariat of Communications and Transportation for its authorization.

San Diego

The primary source of information for this section is the document entitled "San Diego Hazardous Material Commodity Flow Study," which was developed in 2001 by the U.S. Environmental Protection Agency, Region 9.

The movement of hazardous materials through San Diego County (the City of San Diego in particular) is defined by traffic to and from points east (Arizona) and north (Los Angeles metro area), local traffic from production sites or consumption in the region, and cross border traffic with Mexico.

In San Diego County, traffic moves north on I-5 and I-15 toward Los Angeles, north and south on I-805 within the City of San Diego, and east/west on I-8 toward Imperial County and Yuma, Arizona. No specific traffic counts are available that would indicate the number of trucks carrying hazardous materials on these roads.

During the six years from 1994-1999, 1,573 hazardous materials spills in San Diego County were reported to the National Response Center. More than half of these spills (802) were transportation-related. Petroleum products (oil, jet fuel and gasoline) were the most common substances released. Spill history data consist of only of those spills that are reported, largely representing those parties who have complied with spill reporting requirements.

The data indicates that the Navy and Marine Corps combined have accounted for 59% of all reported transportation-related spills. However, the Navy and the Marine Corps have a large presence in San Diego County and established policies for reporting spills.

The cross border traffic with Mexico will be discussed under section 4.3 of the Plan.

4.2.2 Railroads

Tijuana

The transportation of hazardous materials and wastes by rail is also regulated by the April 7, 1993 Hazardous Materials and Wastes Land Transportation Regulation. This regulation contains specific provisions such as: trains transporting hazardous materials and wastes should have on board and in a permanent manner a supervisor from the railroad company who can verify compliance with the regulations. In case of an accident, the railroad crew should implement the safety measures established in the "Transportation Emergency Information." The railroad company should have training programs to ensure that crew assigned to the train service transporting hazardous materials and wastes have the necessary knowledge for their safe handling.

For the use of trains transporting hazardous materials and wastes, the railroad company should establish trunk lines, and should use the existing railroad routes to prevent traveling through urban areas. Also, trains should remain as little time as possible at stations and maintain a traveling speed not to exceed 15.5 miles/hr (25 km/hr) inside the yard.

Presently, the main hazardous material transported in the Municipality of Tijuana by rail is Liquefied Propane Gas (LP gas). This section will be developed by Mexican authorities.

San Diego

Table 5 shows the number of railcars carrying hazardous materials for export in 1999. According to the data, in 1999 no hazardous materials were imported by rail in San Diego.

Table 5

Commodity Description	1999 Annual Number of Railroad Cars
Plastics in primary forms	225
Chemical materials and products	47
Petroleum products	16
Inorganic chemicals	15
Organic chemicals	13
Gas, Natural and manufactured	11
Dyeing, tanning and coloring materials	3
Residues containing metal and metal compounds	3
Cleaning products	1
Fertilizers	0
Chemical preparations	0
Crude minerals	-
Total	**334**

Source: San Diego Hazardous Materials Commodity Flow Study (2001)

4.2.3 Maritime Ports

Tijuana

The City of Tijuana has no seaport of its own. It is served by the Port of San Diego, the Port of San Pedro in Los Angeles, and the Port of Ensenada.

San Diego

There are presently no hazardous materials being shipped in or out of the Port of San Diego.

4.2.4 Other Means of Transport

Tijuana

There is a 23-mile (38-km), 30-inch (76.2 cm) natural gas pipeline in the City of Tijuana, Baja California, which crosses the city from the northeast to the southwest. It passes through Otay Mesa, La Presa, La Mesa, San Antonio de Los Buenos, and extends to the Municipality of Rosarito, Baja California. The control valves for the pipeline are located north of the Otay Mesa sector and southeast of the San Antonio de los Buenos sector. An environmental risk assessment and accident prevention program were developed for this activity, which were reviewed and approved by the Secretariat of the Environment and Natural Resources.

Another important chemical substance to be considered is Liquefied Propane gas (LP Gas), which is transported via underground ducts. The area of the city that has this infrastructure is the downtown sector.

San Diego

Natural gas is transported through underground pipelines throughout San Diego County.

Transportadora de Gas Natural (TGN) built a 23-mile (38-km), 30-inch (76.2 cm) pipeline that began supplying natural gas from the United States-Mexico border near San Diego to the Presidente Juárez power plant in Rosarito, Baja California, in the summer of 2000.

Gasoducto Baja Norte is a 145-mile (242 km) natural gas transportation pipeline that crosses Baja California, Mexico, connecting to the TGN pipeline near Tijuana. The 30-inch (76.2 cm) pipeline has a capacity of approximately 500 million cubic feet per day of natural gas and serves new and existing power plants and industrial customers in northern Baja California and Southern California. The pipeline began operating on September 1, 2002.

4.3 Ports of Entry

There are six ports of entry along the California-Baja California border, which are listed from west to east:

San Ysidro, California / Tijuana, Baja California
Otay Mesa, California / Tijuana, Baja California
Tecate, California / Tecate, Baja California
Calexico, California / Mexicali, Baja California
Calexico East, California / Mexicali, Baja California
Andrade, California / Algodones, Baja California

Table 6 shows historical and projected commercial traffic volumes for the California ports of entry.

Table 6

California Border Ports of Entry - Northbound Commercial Loads			
Border Ports of Entry	**2000**	**2001**	**% of Total Load for 2001**
Otay Mesa	687,577	703,677	68.1
Tecate	61,707	63,279	6.1
Calexico	286,811	264,430	25.6
Andrade	1,578	1,727	0.2
Total	**1,037,673**	**1,033,113**	**100.0**

Source: U.S. Customs, Office of Public Affairs, 07/02

The County of San Diego has three ports of entry for transporting (import/export) hazardous materials: Otay Mesa, Tecate and the Port of San Diego.

The export of hazardous materials through Otay Mesa is greater than the import activity, based on the number of trucks. The majority of the border traffic at Otay Mesa is regional. More than 80% of the merchandise is sent by truck. More than 85% of the exports originate in California and their destination is the state of Baja California. The exports are frequently raw material or partially finished products destined to production plants in Tijuana. The finished products return to the United States as imports. There is less likelihood for finished products to be classified as hazardous materials than raw material used in production.

Exports can present a greater risk for San Diego than imports because materials that are going to be exported tend to remain longer in the region than imports. Imports cross the border and they immediately go to I-5 or I-805 or head east on Interstate I-8 to their final destination, in transit through San Diego. In comparison, exports frequently remain in San Diego at storage facilities or staging areas for consolidation or for payment of Custom duties. This waiting time in the region increases the risk of a local incident.

United States Customs electronically records all the merchandise coming into the country through the Harmonized Tariff System (HTS), assigning a 10-digit code to each material to be imported, including hazardous materials.

Table 7 shows a list of hazardous materials imported through the ports of entry at Otay Mesa and Tecate, based on the first two digits of the HTS code. The category within the first two digits is generic. As the hazardous material is described in more detail, the numeric code becomes larger.

Table 7 Hazardous Materials imported by HTS Code

HTS Code	HTS Description
26	Ores, slag and ashes
27	Mineral fuels, mineral oils and products of their distillation
28	Inorganic chemicals, compounds of precious metals, rare earth metals and radioactive elements
29	Organic chemicals
31	Fertilizers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; inks.
34	Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modeling pastes, dental waxes and dental preparations with a basis of plaster
36	Explosives
37	Photographic and cinematographic goods
38	Miscellaneous chemical products

Source: San Diego Hazardous Material Commodity Flow Study (Harmonized Tariff Schedule of the United States, 2000)

The exporting of merchandise is classified based on the Standard International Trade Classification (SITC). This system uses from one to five digits. The fewer digits that are listed, the more generic the description.

Table 8 shows a list of hazardous materials exported through the Otay Mesa and Tecate ports of entry, based on the first two digits on the SITC code.

Table 8 Exported Hazardous Materials by SITC Code

SITC Code	SITC Description
27	Crude minerals (excluding coal and petroleum)
28	Ash and residues containing metals and metallic compounds
32	Coal, coke and briquettes
33	Petroleum, petroleum products and related materials
34	Gas, natural and manufactured
51	Organic chemicals
52	Inorganic chemicals
53	Dyeing, tanning and coloring materials
55	Polishing and cleaning preparations
56	Fertilizers
57	Plastics in their primary forms
59	Chemical materials and products
88	Chemical preparations for photographic uses

Source: San Diego Hazardous Material Commodity Flow Study (US Bureau of Census)

The Otay Mesa port of entry is the only port of entry in the plan area that facilitates the importation and exportation of hazardous materials as compared to the Tecate port of entry, which only allows the exportation of hazardous materials.

Importation of hazardous wastes and materials from Mexico through the Otay Mesa port of entry takes place three days a week. The imported materials are inspected by hazardous materials technicians of the Bureau of Customs and Border Protection and by a hazardous materials technician inspector, either from the Department Toxic Substances Control or from the Department of Environmental Health, Hazardous Materials Division, of the County of San Diego.

Exportation of hazardous materials occurs through the Otay Mesa and Tecate ports of entry. There is not a set schedule for the exportation of these materials either by the United States Customs or the Mexican Customs Agency. The San Diego County Department of Environmental Health, Hazardous Materials Division inspects trucks to identify illegal exportation of hazardous wastes into Mexico.

If an incident with hazardous materials or hazardous waste occurs on the north side of the ports of entry, Customs and Border Protection will notify the local fire department. The Hazardous Incident Response Team will be notified via normal San Diego Fire Dispatch procedures.

4.4 Sensitive Populations and Vulnerable Areas

As a part of a hazards analysis, the identification of sensitive populations and vulnerable areas is necessary. Available information is presented here.

4.4.1 Sensitive Populations

Tijuana

According to informal procedures followed by the Tijuana Fire Department and Civil Protection of the Municipality of Tijuana, when a hazardous material incident occurs in a business or facility located near a school, hospital or any other sensitive population center, the Fire Department is the local agency responsible for responding to the emergency and making an assessment of the site. If the Fire Department determines that there is an imminent danger to the population near the incident, they will notify them to evacuate or shelter in place. If evacuation takes place, Civil Protection will come to the scene and make a second evaluation of the scene. If Civil Protection determines that a bigger area needs to be evacuated, they will begin the coordination and communication with the Police Department, Emergency Medical Services and other emergency response agencies.

If the Fire Department determines that an evacuation is not necessary, they will perform response operations and Civil Protection will provide follow up coordination depending on the conditions and requirements of the incident.

Summarizing the key segments of sensitive populations, in the Municipality of Tijuana there are 86 health service facilities including hospitals, clinics, and medical centers. Within the plan area there are 18 elementary public schools, 24 elementary private schools, 20 secondary public schools, and 19 secondary private schools.

Additionally, the City of Tijuana has 12 main population centers within the scope of the plan which are listed below:

1. Toreo de Playas
2. Plaza Patria
3. CECUT
4. Palacio Municipal
5. Plaza del Zapato
6. Palacio del Estado
7. Hospital General
8. Toreo de Tijuana
9. Aeropuerto
10. Central Camionera
11. Parque de la Amistad
12. Parque Deportivo

Population Center Number 1 is not considered a vulnerable area because there are no high-risk industries in that area.

Population Centers 2-8 are considered sensitive or vulnerable because the area in which they are located (Zona Centro) has the underground infrastructure for the Liquefied Propane Gas (LP gas). Also, there are ten high-risk companies located in this area.

Population Center 9 is considered a sensitive and vulnerable area due to the jet fuel at the airport.

Population Center 10 is considered a sensitive and vulnerable area because there are two high-risk facilities and an LP gas company nearby.

Population Center 11 is considered a sensitive and vulnerable area because the underground pipelines for the natural gas line are located near this area of downtown.

Population Center 12 is considered a sensitive and vulnerable area because two high-risk companies are located nearby.

More detailed information regarding the Sensitive Populations and Vulnerable Areas is provided in Appendix A.

San Diego

There are schools, hospitals, churches and other facilities located within the plan area, which are considered to be sensitive populations when a hazardous materials incident occurs in a business or facility located near those population centers.

According to California Health and Safety Code, Section 25507.10, emergency rescue personnel responding to the reported release or threatened release of an acutely hazardous material, or to any fire or explosion involving a hazardous material release, shall immediately advise the superintendent of the school district having jurisdiction, where the location of the release or threatened release is within one-half mile of a school.

In San Diego County there are 42 public school districts, including 24 elementary school districts that feed into six high school districts and 12 unified districts, where grades K-12 are contained within a single district. Within the plan area there is one public elementary school district and one public unified school district. Information about those school districts is as follows:

San Ysidro School District is located at 4350 Otay Mesa Road, San Ysidro, California. The Superintendent can be contacted at 619-428-4476, extension 3021.

South Bay Union School District is located at 601 Elm Avenue, Imperial Beach, California. The Superintendent can be contacted at 619-628-1605.

The South Bay Union School District has developed a district-wide safety plan to ensure the highest level of prevention, preparation and response in the event of a crisis or safety compromise occurring at any school in the district. The plan defines specific steps to be taken by school and district-level support personnel in the event of a natural or man-made disaster. School and District Level Crisis Response Teams have been formed.

To advise the hospitals of any release or threatened release of hazardous materials occurring within the operational area, the Multi-Casualty Annex to the Operational Area Emergency Plan describes a two-tiered system of medical disaster notification in the Operational Area. This system, “Alert” and “Activate,” allows hospitals, transporting agencies, and other components of the emergency medical system to prepare for multi-casualty incidents.

When a multi-casualty incident is suspected, but not confirmed, the affected agencies are notified of an Alert. At this point, designated hospitals and agencies consider notifying only their personnel and making other necessary preparations.

The on-scene Incident Commander or his/her designee decides whether to notify their dispatch center to Alert/Activate the Multi-Casualty Annex. Their dispatch center then contacts the Sheriff’s Communication Center (SCC) and requests the Alert/Activate of the Annex. SCC then

makes the necessary notifications. The first arriving ambulance at the scene will contact the Facilitating Base Hospitals and advise them of the incident and that the Multi-Casualty Annex Alert/Activate has been declared.

4.4.2 Population Distribution

Tijuana

In the City of Tijuana, Baja California, the population distribution analysis is done by sectors or "delegations" as follows (Map 2):

In the Playas de Tijuana sector, the land use designation is primarily residential.

In the "Centro" sector, the land use designation is commercial, services and other facilities.

In the San Antonio de los Buenos sector, there are industrial and residential designations.

In the La Mesa sector, the designations are residential and industrial.

In the Otay Mesa sector, land use designations are industrial, residential and public facilities.

In La Presa sector, the designations are residential, industrial and public services.

San Diego

For the border region of San Diego County, the population distribution is based on the land use information provided by the San Diego County Department of Environmental Health (Map 3-4).

In the central region, the land use categories are predominately residential, commercial/office and public facilities/utilities. The industrial area is distributed throughout the City of Chula Vista and adjacent to the international border. This region encompasses the Community of San Ysidro.

In the western region, encompassing the City of Imperial Beach, the land use categories are predominately residential, parks and recreational areas, and vacant land. Included in this area is the Tijuana Estuary preserve. The industrial area is located on the east side of the southernmost part of San Diego Bay. On the west side of the Bay the land use category is primarily public facilities and utilities, including military installations.

In the eastern region, encompassing the Otay Mesa area, the land use categories are predominately agriculture and vacant land. Pockets of industry are distributed throughout the area. Many of these industrial facilities support the maquiladora industry in Baja California. This area also includes public facilities and utilities, including the Brown Field General Aviation Airport, the Donovan State Correctional Facility, and landfills. Adjacent to the international border are rural residential and commercial areas.

4.4.3 Sensitive Natural Resources Areas

Tijuana

The Tijuana-San Diego area has the Cottonwood-Alamar binational creek in common. It originates in the United States with the name Cottonwood Creek and flows south into Mexico. The creeks flowing into it are Kitchen, La Posta, Morena, Hauser, Pine Valley, Corral Canyon, Wilson, Rattlesnake Canyon, McAlmond Canyon, Potrero, Bee Canyon, Campo-Tecate and Mine Canyon.

Once Cottonwood Creek enters into Mexican territory, its name changes to Alamar Creek. The Alamar is currently showing great environmental deterioration from irregular settlements, waste discharges from industries, large deposits of waste and debris, stagnant and contaminated water, as well as arbitrary extraction of rocky materials. The Tijuana City Government is working on the Alamar Arroyo recovery project through the Municipal Planning Institute (IMPlan).

Another important hydrologic unit is the Tijuana River, which runs from south to northeast of Tijuana. The Alamar Creek joins the Tijuana River. It crosses the border and discharges into estuary and the Pacific Ocean in the United States territory.

The Tijuana Estuary is considered a National Sanctuary because a variety of endangered species inhabit this area. Endangered plants and animals are threatened by the Tijuana River discharge, which sometimes contains high concentrations of coliform bacteria, sediment, traces of metals (copper, lead, zinc, chrome, nickel and cadmium), polychlorinated biphenyls (PCBs), and other urban, industrial and agricultural contaminants.

In case of a hazardous material incident, the plants and animals of the Tijuana Estuary would be threatened if the incident were to affect the Alamar Creek or the Tijuana River, which crosses the border and discharges into the estuary.

San Diego

One of the most important sensitive natural resources areas in Southern San Diego County is the Tijuana Estuary. The Tijuana Estuary is a small inter-tidal coastal estuary on the international border between California and Mexico. The estuary is primarily a shallow water habitat, though it is often termed an "intermittent estuary," as it is subjected to extreme changes in stream flow at different times of the year. Extended periods of drought leave parts of the estuary dry during some periods, while flooding inundates the same areas during others. For this reason, the Tijuana Estuary is considered to be a unique part of the National Estuarine Research Reserve System.

The Estuary encompasses a total of approximately 2,500 acres: approximately 1,660 upland acres, 120 non-tidal fresh marsh acres, 400 salt marsh acres, 250 tideland acres and 70 open water acres.

The Tijuana Estuary provides examples of most vegetation communities found in other southern California wetlands. Cord grass (Spartina foliosa) forms robust stands along tidal channels in the northern reaches of the estuary. Above the Spartina-dominated community are found several succulents, including pickle weed and saltwort. At higher elevations these succulents grade into a

cover of shore grass. At the highest elevations, pickle weed becomes codominant with shore grass. The Reserve's marshes also are home to the endangered salt marsh bird's beak. This once abundant plant has been pushed to the brink of extinction by the pressures of marsh destruction in California.

The Reserve boasts more than 370 species of birds, of which about 320 are migratory. Birds at the Reserve include four federally listed endangered birds: the light-footed clapper rail, the California least tern, the least Bell's vireo and the California brown pelican. Peregrine falcons, bald eagles and golden eagles are all occasional visitors as well. The Tijuana River Estuary is located along the Pacific Flyway and is used for staging and wintering by a variety of waterfowl and shorebirds. Wintering waterfowl include pintail, cinnamon teal, American widgeon, surf scoter and ruddy duck.

Shorebirds account for a large portion of the migratory population. While 20 species occur regularly along the sand flats and mudflats of the estuary, four species: the willet, dowitcher, western sandpiper and marbled godwit account for a large part of the bird population throughout the year. Abundance and species composition fluctuate seasonally among habitats with the inter-tidal sand and mudflats supporting both the largest numbers of individuals and species.

The Estuary supports a small mammal population typical of fields and lowland habitats. Rodents, including mice, the California ground squirrel, and rabbits are the most common. At least 29 species of fish reside in the small tidal creeks and channels of the estuary. Species in their juvenile stages that are found in the Reserve's creeks and streams have included longjaw, mudsucker, northern anchovy and several species of gobies. Adult fish residing here include topsmelt, California killifish, staghorn sculpin and longjaw mudsucker.

Crabs are perhaps the most conspicuous invertebrates in Southern California coastal marshes and the Tijuana River Estuary. Rove beetles burrow in the mud and sandflats. A large population of coastal tiger beetles also lives in these areas. The largest population of the wandering skipper in the U.S. resides in the Tijuana Estuary. Several species of mosquito can be found in the Reserve as well. The globose dune beetle and the Belkin's dune fly, both considered threatened, are also found on the Reserve site.

4.4.4 Tecate, California

Tecate, California is a small town with a population of 230 people. It is an unincorporated area of San Diego County. According to San Diego County land use information, the land use distribution in Tecate is predominantly vacant and undeveloped land (Map 5). The community is predominantly agricultural. In the eastern region, the land use categories are industrial, residential, and commercial. The few businesses located in Tecate are primarily commercial with retail stores and warehousing to support cross-border commerce.

4.4.5 Tecate, Baja California

Tecate, Baja California is a community of approximately 73,000 people, located 30 miles east of Tijuana and 86 miles west of Mexicali. Tecate rests on the U.S. border, 45 miles from San

Diego and port facilities. The city is primarily a tourist destination with a very agreeable climate and only occasional rain. The community is predominantly agricultural (Map 6).

The City of Tecate has three industrial parks. The principal types of industry located in Tecate are: polishing and electroplating of metal parts, copper plating, electronic components assembly, wooden furniture and frames, stained glass, automotive alternators, and manufacturing of latex products. The Tecate brewery is a major employer in Tecate representing a significant segment of Tecate industrial base.

The international border crossing at Tecate has both vehicular and commercial gates. With the exception of Andrade, the Tecate border is less traveled than other ports of entry between California and Baja California.

4.4.6 Drinking Water Supplies and Wastewater Treatment

As a part of a hazard analysis, the identification of drinking water supplies and wastewater treatment facilities is necessary. Available information is presented here.

Tijuana

The Tijuana River is the main body of water in the city. Its waters originate in the *Sierra de Juarez* about 8.7 miles (14 kilometers) to the south of the city. The Abelardo L. Rodriguez dam, one of the main water supply sources for the city, captures the river flow. The Tijuana River flows southwest until it meets the Alamar Creek where it enters the United States.

There are several arroyos that converge into the Alamar Creek, among which are the Nido de las Aguilas, Magisterial, Murúa, Industrial, La Loma and Pestejé arroyos. These arroyos are in areas close or adjacent to industries located in the Otay Mesa Delegation, within the two mile (3.2-kilometer) area included in the plan.

Among the creeks that flow into the Tijuana River are the Jonson, Jalisco arroyo and the "K" arroyo, which are in areas close or adjacent to industries located in Downtown Tijuana, within the two mile (3.2-kilometer) area included in the plan.

In the case of a hazardous materials release, if the release flows to the arroyos that converge to the Alamar Creek or to the arroyos that flow into the Tijuana River, the contaminants could be transported by the Tijuana River to the Tijuana Estuary and the Pacific Ocean.

If the release enters the storm water sewer system, the contaminants would be transported directly to the beaches and to the Pacific Ocean without receiving any type of treatment, because the storm water sewer system is not connected to the city's wastewater treatment system.

If the contaminated water flows into an area where the soil does not have an insulating protective layer, the water will filter into the soil and subsoil and could contaminate the water tables or basins in the area where the incident originated.

County/City of San Diego, California

There are a total of 11 hydrologic units in the San Diego Hydrologic Region. From north to south they are San Juan Creek, Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, San Diego, Peñasquitos, Pueblo San Diego, Sweetwater, Otay, and Tijuana. For purposes of the plan, the focus is the Otay and Tijuana river basins because these two basins are located in the south of the San Diego Hydrologic Region, within the border area.

The Tijuana river basin covers San Diego County and the Municipalities of Tijuana, Rosarito and Tecate in Baja California. The basin has an approximate area of 1,750 square miles (4,530 square kilometers). Only 30% of the basin is in California, the remaining 70% is in Baja California.

The San Diego Water Department supplies potable water to the city from three treatment plants: the Miramar Filtration Plant located to the north of the city, the Alvarado Filtration Plant located in the central part and the Otay Filtration Plant located to the south of the city.

The Otay Filtration Plant receives water from the Morena, Barret and Lower Otay reservoirs. The Otay Reservoir is considered one of the three main bodies of water in the Otay river basin. The primary land use designations in the Otay river basin are 67% open space and 20% urban/residential. The basin consists mainly of unincorporated areas, but it also includes portions of Chula Vista, Imperial Beach, Coronado, National City and San Diego. Discharges reaching the Otay basin are urban, agricultural, septic and marine in nature.

The Tijuana river basin has primarily three bodies of water: Tijuana River, Cottonwood Arroyo and the Tijuana Estuary. Only 30% of the basin is located in California. The river discharges into the Tijuana Estuary and the Pacific Ocean. The cities of Imperial Beach and San Diego on the United States side of the border have jurisdiction within the basin. The cities of Tijuana and Tecate on the Mexican border are the most important urban centers located in the basin.

The Tijuana river basin is classified by the State Water Resources Control Board as Category I (impaired), due to the large variety of water quality issues. These problems are the result of mobile agricultural sources in the United States territory and a large variety of point and mobile sources in Mexican territory. Discharges reaching the Tijuana river basin are urban, spills from the sewage system, industrial spills, and agricultural and septic spills.

4.5 Counter terrorism

The events of September 11, 2001 have altered the way that people view terrorism. Terrorist acts constitute a global threat, and can happen in any community at any time. In order to safeguard our freedoms, while guarding against terrorist activity, a cooperative international strategy must be developed. The need for such collaboration is nowhere more important than along the U.S./Mexico border.

The substantial flow of people and goods across the U.S./Mexico border is vital to the economies of both nations. However, such movement along the border area can also serve as a conduit for terrorist acts. Nuclear, chemical and biological weapons of mass destruction pose a real threat to which U.S. and Mexican authorities must be prepared to respond.

The first line of defense in any terrorist attack is the first responder community – local law enforcement, firefighters, emergency medical professionals, public health, and public workers. Properly trained and equipped first responders have the greatest potential to save lives and limit casualties after a terrorist attack. Currently, capabilities for responding to a terrorist attack vary widely across the U.S./Mexico border region. Strengthening the assets, training and communications capabilities of first responders along the border will contribute to the safety and well being of border communities.

Cross border response and contingency plans are the cornerstone documents for cross border planning and response to terrorist acts. The planning process provides an opportunity for U.S. and Mexican agencies to assess capabilities and develop appropriate communication, cooperation and response protocols.

In addition to improving and coordinating their response capabilities, border communities need to conduct terrorist vulnerability and risk assessments of ports of entry, public and private fixed facilities, highways and waterways to guide prevention and response efforts.

The development of counter-terrorism strategies requires the participation of additional federal and state law enforcement and health authorities. A list of the appropriate authorities is included in the supplemental directory of Hazardous Material Planning and Emergency Response Contacts.

4.5.1 U.S. Response

In the wake of the terrorist attacks, the new Department of Homeland Security was created to provide a unified homeland security structure that will improve protection against today's threats and be flexible enough to help meet the unknown threats of the future.

The mission of the new Department is to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that may occur.

The Department of Homeland Security has four main divisions:

- Border and Transportation Security
- Emergency Preparedness and Response
- Chemical, Biological, Radiological, and Nuclear Countermeasures
- Information Analysis and Infrastructure Protection

The Department of Homeland Security is responsible for securing the borders and transportation systems. The department manages who and what enters the United States, and works to prevent the entry of terrorists and the instruments of terrorism while simultaneously ensuring the speedy flow of legitimate traffic.

The Department works with federal, state, and local public safety organizations to build a comprehensive national incident management system for response to terrorist threats involving weapons of mass destruction and natural disasters. It directs exercises and drills for federal, state, and local chemical, biological, radiological, and nuclear response teams and plans. The

existing federal government emergency response plans will be consolidated into one genuinely all-hazard plan. In time of an emergency, the Department will manage and coordinate federal entities supporting local and state emergency response efforts.

4.5.2. San Diego County Response

San Diego County developed the Operational Area Emergency Plan in March 2000, which describes a comprehensive emergency management system. It defines responsibilities, establishes an emergency organization, defines lines of communication, and is designated to be part of the statewide Standardized Emergency Management System. The Operational Area Emergency Plan has fifteen Annexes. The Unified San Diego County Emergency Services Organization approved the sixteenth Annex (Annex P), which addresses terrorism in the San Diego County Operational Area.

The San Diego County Board of Supervisors approved Annex P in September 2001. The purpose of this Annex is to establish a terrorism response system and prescribe responsibilities and actions required for the effective operation of the response to acts of terrorism. To see the full text of Annex P, visit the San Diego County Office of Emergency Services website at: http://www.co.san-diego.ca.us/cnty/cntydepts/safety/disaster/emerplan/index.html.

4.5.3 Mexican Response

In light of the September 11 events in New York, and the subsequent emergency response preparations, the public is on alert for the possibility of mass terrorist actions, with the possibility of using biological and/or chemical agents, which would put the public at risk. Even though the risk of a terrorist attack in Mexico is very unlikely, public health and safety services should have a plan for Surveillance and Notification Systems, as well as contingency plans in case of major emergency situations. With this in mind, the State Department of Civil Protection for Baja California has prepared the basis for the Border Security Project, which was submitted and approved in May 2003.

The objective of the Border Security project is to create a plan or system for binational coordination and cooperation, specifically designed to prevent, investigate or address terrorist acts, which would have to be approved by the heads of relevant federal agencies and by governors and municipal authorities in both countries.

The participating Mexican institutions are: The General Office of Civil Protection, State of Baja California Civil Protection Municipal Organizations, Municipal Fire Departments, Non Governmental Organizations (NGOs) and ISESALUD. Also participating with regard to security are: the National Immigration Institute (INM for its Spanish acronym), Secretariat of Treasury and Public Credit (SHCP for its Spanish acronym)/Customs, the Attorney General's Office, Federal Preventive Police (PFP for its Spanish acronym), Investigation and National Security Center (CISEN for its Spanish acronym), Secretariat of Foreign Relations (SRE for its Spanish acronym)/Consulate, the State Attorney General (PGJE), and the Office of Municipal Public Safety (DSPM for its Spanish acronym).

The institutions participating in the United States are: INS, Border Patrol, U.S. Customs, Justice Department, FBI, U.S. Marshall, Attorney General's Office, and local Police Departments.

5.0 ENVIRONMENTAL EMERGENCIES RESPONSE

5.1 Local Emergency Response

Emergency Response within San Diego County

There are over 400 hazardous materials responses a year in the San Diego County Operational Area. An average of six responses a year occur within the border area. The HIRT Team is made up of California State Certified Hazardous Materials Technicians and Specialists. The HIRT is a Joint Team staffed by DEH and San Diego Fire-Rescue Department to investigate and mitigate chemically related emergencies or complaints. Emergency response activities include mitigation, containment and control actions as well as hazard identification, so as to evaluate the threat to the local populations and the environment.

The response capabilities of the DEH-HIRT and the San Diego Fire-Rescue Hazardous Incident Response Team are described in Appendix B.

Emergency Response within Tijuana, Baja California

In the Municipality of Tijuana there are 50 hazardous material emergency responses a year. The Tijuana Fire Department is the main response entity in the City of Tijuana. The Fire Department Hazardous Materials Division staffs the Hazardous Materials Response team with nine members to respond to all hazardous materials emergencies within the city. The team has received 280 hours of hazardous material training. Also, the Hazardous Material Response team serves the Municipality of Tecate if assistance is requested.

The response capabilities of the Tijuana Fire Department are described in Appendix B. A list of resources for the Tijuana Civil Protection Administration is also included.

5.2 Declarations of Emergency

County/City of San Diego, California

According to the Emergency Management Annex to the San Diego County Operational Emergency Plan, there are three levels of declaration of emergency, which are described as follows:

1. Local Emergency Proclamation

In the event of a disaster or condition of extreme peril to persons and property within a jurisdiction, which is beyond the capability of local responders to manage, the Board of Supervisors assumes the role of initiating a Proclamation of Local Emergency for the entire Operational Area. A hazardous materials incident is one of the events that can lead to a Local Emergency Proclamation.

2. State of Emergency

After or as part of the Proclamation of a Local Emergency, the Board or City Council may request that the Governor proclaim a State of Emergency. The Governor's State of Emergency allows for the following:

- Mandatory mutual aid may be exercised
- The Governor may request the President to declare an Emergency or Major Disaster
- The Governor has the authority to commit State resources

3. Presidential Declaration

After or as part of a Proclamation of a State of Emergency, the Governor may request that the President declare an Emergency or Major Disaster. The Presidential Declaration allows for Federal disaster assistance and resources.

Tijuana, Baja California

The following is a description of the state of emergency process, which should be primarily declared by the Mayor. If the Mayor is not available to do so, the City Manager may declare a state of emergency, or if he is not available, the Civil Protection Director can do so. Each of them has this authority in their respective capacities as President, Executive Secretary and Technical Secretary of the Municipal Civil Protection Council.

State of Pre-alert: The state of pre-alert refers to an unusual situation, which arises due to the potential occurrence of destructive phenomena implying that there is a need for the appropriate organizations to take precautionary measures. A **PRE-ALERT** is generated when the Municipal Civil Protection Agency identifies signs regarding the potential occurrence of a catastrophe, based on reports from the observation network or through supplemental sources, as well as from visual perception or external reports.

State of Alert: The state of **ALERT** is established when information is received regarding the imminent impact of a disturbing phenomena capable of affecting and even destroying, in such a way that it is very feasible that more specific measures and actions have to be enforced in order to respond to the emergency.

State of Alarm: The state of **ALARM** is established when there has been damage to the population, its assets and environment, which call for the need to execute the Municipal Contingency Plan. In the state of alarm, it is necessary to have the immediate intervention of responding agencies and organizations. The state of alarm can be present without previously going through a state of pre-alert or alert, as in the case of an earthquake. The state of emergency will always be declared in the alarm phase. The actions to be carried out at this level are practically the same as in the state of alert, however, if the condition is a catastrophe, and according to the situation and to what is established by the Municipal Government and the Municipal Civil Protection Council, it may be necessary to request State and Federal cooperation.

The Municipal Center for Emergency Operations (C.M.O.E. for its Spanish acronym): The C.M.O.E. is set up temporarily when information of a disaster occurring in municipal territory is received; it is the place where members of the Municipal Civil Protection Council meet to guide and coordinate actions, to make decisions and order their execution, as well as establish communication channels and follow-up on the situation that caused the disaster.

When to Activate the C.M.O.E.:
The C.M.O.E. is activated when a situation occurs or might occur of a magnitude that requires any amount of resources from several City/County Agencies for an extensive period of time, and when the magnitude of the problem requires central control, guidance and coordination to respond to the emergency.

Types of Activation:
- Partial
- Total

Type of Risks that Activate It:
- Hydrometeorological
- Geological
- Socio-organizational
- Chemical
- Sanitary

Who Can Activate the C.M.O.E:
- Mayor
- City Manager
- Director, Civil Protection

How to Activate It:
In case a state of PRE-ALERT, ALERT or ALARM is declared, telephone and radio communication (by pager) will be established with the coordinators of each work team that make up the Municipal Civil Protection Council. Furthermore, the Municipal Center for Emergency Operations will be established according to the current protocol. Key personnel from the Municipal Civil Protection Council will be notified, verifying their availability at the time the message was received.

Table 9 shows the levels of state readiness in relation to the emergency situation.

Table 9

Situation / Level	Normal	Threat of Loss	Impending Loss Occurrence	Emergency		
				Municipal	State	National
Municipality	Normal	Pre-alert	Alert	Alarm	Alarm	Alarm
State	Normal	Normal	Pre-Alert	Alert	Alarm	Alarm
Federation	Normal	Normal	Normal	Pre-Alert	Alert	Alarm

5.3 Levels of Mutual Aid Within Each Country

County/City of San Diego, California

The San Diego County Operational Area Emergency Plan has been designed to follow the statewide Standardized Emergency Management System (SEMS). The plan describes situations associated with natural disasters, technological incidents, and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of the Emergency Management Organizations, and describes the overall responsibilities for protecting life and property and assuring the overall well being of the population. The plan also identifies the sources of outside support, which might be provided through the mutual aid system by other jurisdictions, state and federal agencies and the private sector.

The mutual aid system is designed to ensure that adequate resources, facilities, and other support are provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. To facilitate the coordination and flow of mutual aid, the state has been divided into three Office of Emergency Services (OES) Administrative Regions and six OES Mutual Aid Regions.

Through this mutual aid system, State OES can receive a constant flow of information from every geographic and organizational area of the state.

Tijuana, Baja California

The Municipality of Tijuana, B.C. has the Municipal Civil Protection System in which all the agencies related to emergency prevention and response at the three levels of government participate. The system also has the support of private, social, community and voluntary groups. In case of a hazmat incident of such magnitude that the effects of the emergency or disaster exceed the response capability of the Municipal Civil Protection System, the Mayor will seek the declaration of a State Emergency and will request the Governor of the State to activate the State Emergency Plan to provide the corresponding assistance.

By declaring a State Emergency, the Governor will implement the Emergency Response Plan through the State's Civil Protection Administration. The Civil Protection State Board will be in charge of planning, coordinating, guiding and controlling actions towards solving urgent needs, implementing programs and protection, as well as safeguarding and rehabilitation activities in coordination with Municipal Systems.

In the event the emergency or disaster exceeds the response capabilities of State Civil Protection, the Governor of the State can request the federal authorities to make the corresponding Declaration and assign federal resources to carry out actions guided towards the protection of life and health.

5.4 Federal Response

The U.S. Federal government can provide assistance for hazardous materials incidents if combined local and state capabilities or resources prove insufficient, incapable or inadequate. Once the National Response Center (NRC) has been notified of a release, they alert the Federal On-Scene Coordinator (FOSC), who may activate the Regional Response Team (RRT) or the

National Response Team (NRT), depending on the severity of the incident. For incidents occurring in the San Diego County area, the Federal On-Scene Coordinator will be from the U.S. EPA Region IX, headquartered in San Francisco, California.

Normally, the U.S. EPA contributes to the response by working with the local, state, tribal and federal agencies and citizens to assure that the information needed to maximize the effectiveness of the response effort is easily accessible. If there is a spill where the responsible party is not identified, or does not contain and clean up the material, or adequately respond, the federal responsibilities will prevail as outlined in the National Contingency Plan. These responsibilities include assisting state and local responders or, in some circumstances, taking over the response.

Federal agreements between the U.S. and Mexico require that each country notify the other if there is a release or substantial threat of a hazardous materials release that may impact the other side of the border. The notification should occur between local authorities and between state authorities on both sides of the border to ensure that the information is properly elevated to the federal levels as required.

If it appears that the incident may exceed the capabilities of the local and state resources, the Federal On-Scene Coordinator will request the Joint Response Team to implement the Joint Contingency Plan.

The Mexican Federal Government can provide assistance through the National Civil Protection System for hazardous materials incidents to Tijuana, Baja California, if the combined responsible party and local capabilities or resources prove to be insufficient or inadequate. Civil Protection will appoint an On-Scene Coordinator (OSC) who will assist the Incident Commander by providing, coordinating, and overseeing needed federal resources.

5.4.1 U.S. Environmental Protection Agency

The U.S. EPA activates and operates the federal response system for inland hazardous materials incidents and provides a Federal On-Scene Coordinator who can provide technical resources and expert advice on public health and environmental effects of a release. U.S. EPA also provides planning and preparedness assistance to prevent and mitigate environmental harm.

The U.S. EPA Regional Response Team performs regional level contingency planning. National level contingency planning is performed through the National Response Team (NRT). The Regional Response Team (RRT) is co-chaired by the U.S. EPA and the U.S. Coast Guard (USCG) and consists of representatives from selected state and federal agencies. It plans, prepares and responds to hazardous materials incidents, providing advice and recommendations to the Federal On-Scene Coordinator.

The U.S. EPA's Emergency Response Program has responsibilities pursuant to the National Contingency Plan to respond to incidents involving hazardous materials and petroleum products. The Program also conducts response operations during national disasters, under the authority of the Federal Response Plan. EPA provides support to the Federal Bureau of Investigation (FBI) for Crisis Management, and the Federal Emergency Management Agency (FEMA) Consequence Management during terrorist events, under the direction of Presidential Decision Documents. These activities are carried out through the National Response System (NRS), which is the

Federal mechanism for responding to releases or incidents. The NRS is a multi-agency/multi-level system and has been in existence for 30 years. It was designed to support state and local responses. A number of assets are available through the NRS including Regional Response Teams, Federal On-Scene Coordinators, contractor support and special forces. The Regional Response Team (RRT) brings together the resources from 16 Federal agencies and the states to support response activities. The Federal On-Scene Coordinator (FOSC) provides coordination and manages Federal response resources through the incident command/unified command system. The FOSC can bring a number of special forces to play during a response that include the EPA's Environmental Response Team, EPA's Radiological Environmental Response Team, and the U.S. Coast Guard's National Strike Force. These resources provide specialized technical expertise and resources to a response. EPA's response assets can be accessed through the National Response Center (NRC) at 1-800-424-8802. The Agency's Response Program has proven to be very effective during recent terrorist events, including the World Trade Center and numerous anthrax responses. The dedicated men and women working in this program have overcome a number of obstacles, and are on the cutting edge when it comes to effectively addressing public health and environmental issues associated with terrorist threats.

5.4.2 Federal Attorney General for the Protection of the Environment

This section will be developed by PROFEPA.

5.5 Joint Response Team

When the magnitude of an incident exceeds local and state response capabilities, or when a response involves more than one state jurisdiction, or federal lands, the federal government will coordinate the response operation and provide assistance as necessary. The U.S. EPA co-chairs the Joint Response Team for the U.S. and PROFEPA co-chairs for Mexico.

When the U.S. and Mexico have agreed to initiate a joint response to an incident, the function and responsibilities of the Joint Response Team include:

- Advise the Federal On-Scene Coordinator about measures needed to respond to the incident and what resources are available to carry out those measures
- Evaluate and make recommendations concerning the measures taken by the Federal On-Scene Coordinator
- Provide continuing advice to the Federal On-Scene Coordinator
- Coordinate and use as appropriate the resources that agencies or persons of the U.S. or Mexico or a third party can contribute
- Assist the Federal On-Scene Coordinator in preparing information releases for the public
- Participate in the termination of response

In a non-emergency mode, the JRT coordinates U.S.-Mexico border area contingency planning and training activities.

For inland releases, the U.S. EPA provides the Federal On-Scene Coordinator. Upon notification of a release of hazardous substances that is crossing or is likely to cross the U.S.-Mexico border, the National Response Center will notify the Federal On-Scene Coordinator. The Federal On-Scene Coordinator will determine as quickly as possible the need for activating the Regional

Response Team, the Joint Response Team, the Environmental Response Team (ERT), or the National Response Team. For incident notification in Mexico, Civil Protection maintains a 24-hour telephone number in Mexico City. For incident notification in the U.S., the NRC maintains a 24-hour number in Washington D.C.

5.6 San Diego-Tijuana Emergency Response Communications

Historically, there has been informal communications between San Diego and Tijuana emergency response agencies regarding hazardous materials incidents. Officials of these jurisdictions have communicated through beepers and phone lines during these incidents. As a part of this informal communication, binational technical support has been exchanged between the County/City of San Diego and the City of Tijuana.

As a part of the binational plan development, representatives from the Federal, State and local agencies from the United States and Mexico have formalized communications and notifications procedures between San Diego and Tijuana Emergency Responders. A complete flow chart of north and southbound notification procedures is illustrated in Appendix G. The Notification Protocol will be discussed in section 6.2.

6.0 BINATIONAL EMERGENCY RESPONSE OPERATIONS

General Information

The Incident Command System (ICS) is a standardized on-scene emergency management system specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The Incident Command System is built around five major management sections in accordance with the Standardized Emergency Management System (SEMS).

a) Command: Sets the response objectives and priorities. It has the overall responsibility at the incident or event.
b) Operations: Manages the tactical operations to carry out the incident action plan, develops and evaluates the tactical objectives, organizes and directs all the resources available (including the hazardous materials group).
c) Planning: Responsible for collecting, evaluating, disseminating, and using information about the incident and status of resources. This information is needed to: 1) understand the current situation, 2) predict the probable course of incident events, and 3) prepare alternative strategies for the incident.
d) Logistics: Responsible for providing facilities, services, and material in support of the incident response. Identifies and processes requests for additional resources to support planned and expected operations.
e) Finance/Administration: Is responsible for all financial and cost analysis aspects of the incident. Monitors the costs, provides accounting, procurement, time recording and cost analyses.

Sections under the Incident Command System are staffed and utilized as required depending on the scale of the incident.

6.1 Initiation of Action

A hazardous materials response action takes place when an incident merits the participation of the members of the Hazardous Materials Incident Response Team of the City and County of San Diego (HIRT) and/or of the City of Tijuana.

6.1.1 Incident Command Authority

<u>San Diego</u>

This section is intended to provide a brief overview of the regulations which provide guidance for the implementation of the Incident Command System (ICS) and how the ICS is typically utilized in the County of San Diego.

According to Federal (29 CFR 1910.120 (q)(3)(i)) and California (Title 8 CCR Section 5192(q)(3)(a)) regulations, the senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). In San

Diego County, the local fire agency is the first responder to all non-roadway hazardous substance releases. The senior emergency response official from that fire agency fulfills the role of Incident Commander (IC).

The authority for incident command at the scene of an on-highway hazardous substance incident is vested in the appropriate law enforcement agency having primary traffic investigative authority on the highway where the incident occurs (CVC §2454). The California Highway Patrol is responsible for incident command at the scene of an on-highway hazardous substance spill or disaster on all highways (and roadways in the unincorporated areas) where the department has primary traffic investigative authority. On all other roadways the local police department or Sheriff's department has primary traffic investigative authority and is responsible for ensuring that ICS is instituted at hazardous substance spills. In San Diego County, agreements are in place between the local police and Sheriff's departments and the local fire agencies, which authorize the fire agencies to perform the function of incident commander at hazardous substances releases on all (non-highway) roadways. An exception to this is in place in the City of Vista, where the Sheriff retains the role of IC for all hazardous substance incidents on roadways.

According to CGC 8670.7, the Department of Fish and Game has the primary authority to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the state.

Additionally, CGC 8607 requires that state and local agencies use a standardized emergency management system (SEMS) to coordinate multiple jurisdiction or multiple agency emergency and disaster operations.

In the Operational Area of San Diego, the Incident Commander will determine the participation of the Hazardous Materials Incident Response Team (HIRT). HIRT is comprised of members from the San Diego Fire-Rescue Department's Hazardous Materials Team and members of the Hazardous Emergency Response Team from the San Diego County Department of Environmental Health (DEH).

On scene, the Incident Commander will appoint the San Diego Fire-Rescue Department Hazardous Materials Team Captain, as the Hazardous Materials Group Supervisor under the Operational Section of the Incident Command System. The Hazardous Materials Group Supervisor is responsible for coordinating and directing all hazardous materials activities related to the incident. They are tasked with providing personnel, equipment and expertise to safely mitigate hazardous materials incidents. The supervisor has thorough knowledge of agency specific requirements, operational procedures, risk analysis, and safety considerations to manage the incident.

The Hazardous Materials Group Supervisor's responsibilities include:

1) Obtain briefing from the Operations Section, or from the Incident Commander if an Operations Chief is not appointed
2) Ensure the development of control zones and access control points
3) Evaluate and recommend public protection actions

4) Ensure that current weather data and future weather predictions are obtained
5) Establish environmental monitoring of the hazard site for contaminants
6) Ensure that a Site Safety Plan is developed and implemented
7) Conduct safety meetings with the hazardous materials group
8) Participate in the development of the Incident Action Plan
9) Ensure that recommended safe operational procedures are followed
10) Ensure that proper personal protective equipment is selected and used
11) Maintain Unit log
12) Ensure that all appropriate allied agencies are notified, including Local, State, and Federal, and Mexico when appropriate.

During an incident, a member from the San Diego County Department of Environmental Health is routinely assigned to work closely with the Hazardous Materials Group Supervisor to address public health and safety issues. They are able to:

1) Identify or assist in the identification of the material on scene
2) Act as technical advisor on characteristics and direct health and environmental effects of the hazardous materials on scene
3) Assist the Incident Commander in the determination of the need for evacuation and the establishment of the reentry criteria
4) Perform multi-media sampling to determine the extent of the environmental contamination and to identify any public health concerns
5) Recommend cleanup levels and advise on the adequacy of cleanup both during and after the emergency
6) Assist the IC in obtaining financial and other resources necessary for any required cleanup.
7) Provide on-scene liaison with other agencies and Mexico.

Tijuana

This information will be provided by Mexican authorities.

6.2 Binational Notification

For the purpose of this plan, the Hazardous Materials Group Supervisor, under the Incident Command System, is tasked with triggering the notification to counterparts in Tijuana or San Diego.

During a hazardous materials incident, the Hazardous Materials Group Supervisor will gather and analyze all incoming information from the incident. A decision will be made with concurrence of the Incident Commander and the emergency responder from DEH (if the incident occurs in San Diego) to activate the binational notification protocols.

In order to facilitate the notification between the Hazardous Materials Response Teams of San Diego and Tijuana, a binational notification protocol has been developed. A flow chart of the north and southbound notification procedures is included in Appendix G.

The San Diego County Communications Center, Station M, and the Tijuana Fire Department will serve as the dispatch centers for the hazardous materials binational notifications. Each of the dispatch centers will complete the Local Emergency Notification Form (Appendix I) when contacted by their respective Hazardous Materials Group Supervisors on scene. The information compiled on the form will then be provided to the dispatch center of the Sister City. The recipient dispatch center will then provide the information to the local emergency response team.

6.3 Binational Mutual Aid Request

There are two types of aid that may be provided or received under this plan: technical and logistical assistance. The City/County of San Diego will provide technical assistance to their counterparts in Tijuana. The assistance to be provided by the City/County of San Diego will be via telephone between the Hazardous Materials Team and their counterparts in Tijuana.

The United States Environmental Protection Agency may provide logistical support as deemed appropriate.

As previously stated in section 5.4.1, any direct assistance in responding to an incident in either country that exceeds local capability will be initiated through the U.S./Mexico Joint Response Team.

7.0 TRAINING AND EXERCISES

Each of the operational plans referenced requires training and exercising to ensure that responders are always in a state of readiness. Joint training and exercising are important to emphasize as binational relationships and activities develop.

The preparation of a written plan with well-defined operational roles, policies and resource acquisition procedures is an essential step. The written plan should contain training requirements and procedures for responders. Exercising the plan provides training, allows response personnel to become thoroughly familiar with response procedures, resources and systems, and enables planners to identify areas of the plan that need improvement.

While not included in this binational emergency response plan, a written training plan based on the unique needs of the San Diego/Tijuana area could be developed by the San Diego/Tijuana Emergency Preparedness and Response Task Force (Task Force). The Task Force is addressed in the memorandum of understanding signed by the participating parties.

7.1 Training

Individual organizations are responsible for their own training. Internal training, private contractors, and state or regional training resources are some of the binational options available to local agencies. Organizations must ensure that personnel are adequately trained for the response operations they may conduct. This training must comply with all applicable local, state, and federal worker health and safety regulations.

Currently, hazardous materials specialists in both San Diego and Tijuana participate in regular training sessions. For example, the Department of Toxic Substances Control of the California Environmental Protection Agency funds hazmat training programs for first responders in municipalities throughout Baja California. The Governor's Office of Emergency Services periodically receives disaster-planning officials from Baja California at the California Specialized Training Institute (CSTI) in San Luis Obispo. These and other avenues for training should be explored and highlighted in the training plan developed by the Task Force.

7.2 Exercises

Local and regional hazardous materials contingency plan exercises are encouraged, as they are the best means of keeping the plans current and active. Tijuana, Baja California and San Diego County, California should routinely conduct joint exercises that allow for cross training of personnel. This will ensure that deficiencies in response activities are identified. To keep this plan current, the plan will be exercised.