County of San Diego

RESILIENCE REVIEW REPORT 1-19:

WILDLAND FIRES

PREPARE   RESPOND   RECOVER

Transforming San Diego County into the most resilient County in the nation.

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About the Resilience Review Working Group

The County of San Diego's Chief Administrative Officer's Resilience Working Group is composed of subject matter experts from various County departments.

Led by the County's Chief Resilience Officer, the Working Group conducts in-depth risk assessments of physical, social, and economic vulnerabilities in the region, its communities and residents. The Working Group then recommends proactive solutions to lessen these risks by improving our County's capability to plan for, respond to, and recover from acute shocks and chronic stressors.

The ultimate goal of the County's Resilience Program is to transform the County of San Diego into the most resilient County in the nation.

Executive Summary

The growing frequency of acute shocks from natural disasters and the chronic stressors from complex social challenges, combined with the growing complexity and interdependence of our society, threaten the prosperity of the County of San Diego and our way of life. To addresses these challenges, the County of San Diego (County) has developed and implemented The County Resilience Program. The County Resilience Program ensures a well-integrated and proactive approach to achieve the County's strategic initiatives of *Building Better Health, Living Safely, Sustainable Environments/Thriving, and Operational Excellence.*

The Resilience Review Process is the main assessment component of the Resilience Program. The Resilience Review is designed to identify gaps in the County's approach to reducing community risk as well as the impacts from acute shocks and chronic stressors.

In March of 2019, the Chief Administrative Officer tasked the Resilience Review Working Group with developing recommendations to further reduce wildfire risk and strengthen community resilience in the County's unincorporated areas.

The Working Group met with community stakeholders, experts, and other key leaders throughout the region to perform a comprehensive assessment of existing County wildfire preparedness and response and recovery plans, programs, projects, and outreach strategies.

Overall, the Working Group found that the County maintains first-rate plans, programs, and capabilities to mitigate, respond and recover from the wildfire threat and has made significant progress by increasing preparedness efforts. In fact, many recommendations in this report are already being considered or implemented.

Ultimately, addressing the wildfire threat in our region remains an ongoing challenge that will require continuous risk evaluation and investment. This report provides County leadership with proactive recommendations to further reduce community risk to wildfires.

About Wildfires

- *Unlike most natural disasters, wildfires are often caused by people*
- *On average, more than 100,000 wildfires clear 4 to 5 million acres of land in the U.S. every year*
- *Uncontrolled blazes fueled by weather, high winds, and dry underbrush can burn acres of land—and consume everything in their path—in just minutes*
- *A wildfire moves at speeds of up to 14 miles an hour – a human in peak shape can run between 10 to 15 miles an hour*
- *Naturally occurring wildfires return nutrients to the soil by burning dead or decaying matter and act as a disinfectant, removing disease-ridden plants and harmful insects from a forest ecosystem*

(National Geographic, Climate 101: Wildfires)

Recommendations

The Working Group's recommendations achieve two overarching goals to enhance community resilience: proactively reduce the physical, social, and economic effects of wildfires and communicate the County's efforts to prepare for, respond to, and recover from wildfires.

The Working Group recommends 16 principal objectives divided among three focus areas: pre-fire, response, and recovery. The objectives are broken down into 50 specific tasks.

These recommendations were developed by the Working Group, and are based on expertise, experience, research, best practices, and other relevant information. This process included gathering input from County Board of Supervisors, reviewing after action reports and County plans, engagement with key stakeholders, and aligning with nationally recognized frameworks. Detailed findings in support of the recommendations can be found in each section of this report.

PRE-WILDFIRE

The Working Group determined that building greater wildfire resilience across the region requires an increased focus on fire preparedness at the neighborhood-level. Specific community recommendations include:

  ➢ Implementing a cohesive County pre-fire strategy
  ➢ Enhancing pre-fire vegetation management
  ➢ Improving pre-fire emergency planning
  ➢ Strengthening fire safety measures in new construction
  ➢ Reducing loss from wildfires in existing structures

RESPONSE

The Working Group determined that the County's wildland fire suppression capabilities are second to none among local governments across the nation. However, to remain ahead, the Working Group recommends additional investment in multiple response-related capabilities, including:

  ➢ Increase County Fire's firefighting capabilities
  ➢ Enhancement of accessible transportation services to include the evacuation of at-risk populations and large animals
  ➢ Improved operational communications among response personnel
  ➢ More rapid and efficient restoration of essential services and systems
  ➢ Improved delivery of coordinated, timely, reliable, and actionable information to the whole community during a wildfire

RECOVERY

The 2019 County Operational Area Recovery Plan for the region is expected to be considered by the Board of Supervisors in September 2019. The County's initiative to develop this plan reflects its commitment to improving the recovery process predominately within the unincorporated areas. To further enhance recovery efforts across the region, the Working Group recommends:

➢ The ongoing development of a County Debris Removal Framework in the unincorporated areas and the increased allocation of appropriate resources for its development and implementation

➢ Developing administrative tools and processes that improve the speed and efficiency in providing emergency interim housing options to victims of a wildfire in the unincorporated communities

➢ Improvements in health and social services capabilities in the unincorporated communities

➢ Increased County capacity to coordinate large-scale recovery operations within the unincorporated areas

Objectives Overview

PRE FIRE OBJECTIVES

A. Develop and implement a more cohesive pre-fire strategy

B. Enhance pre-fire vegetation management

C. Improve pre-fire emergency planning

D. Strengthen fire safety measures in new construction

E. Reduce potential for wildfire loss in existing structures

RESPONSE OBJECTIVES

A. Increase County Fire wildland and specialized firefighting capability

B. Enhance accessible transportation and evacuation services

C. Increase operational coordination capacity

D. Increase operational communications capacity

E. Improve rapid restoration of essential services and systems

F. Enhance delivery methods for public information and warning

G. Enhance search and rescue capabilities

RECOVERY OBJECTIVES

A. Continue debris removal program improvements

B. Implement emergency interim housing solutions

C. Improve health and social services capabilities

D. Increase operational coordination capacity

Next Steps

Accomplishing the objectives and tasks outlined in this report will require a whole of community effort and strong public and private collaboration. These recommendations will also require increased resources (i.e. people, time, money, and materiel). Following the endorsement of this report by the County's Chief Administrative Officer, the Chief Resilience Officer will track the progress of its objectives and tasks and continue to assess the County's level of resilience to wildfires. The Chief Resilience Officer will also highlight any obstacles to implementation, as well as any identified best practices within and outside the region.

Introduction: What the County Faces

The growing frequency of acute shocks from natural disasters and the chronic stressors from complex social challenges threaten the prosperity of San Diego County and our way of life. A **shock** is a sudden incident that negatively impacts the community. The most common shocks include natural disasters,

such as wildfires, floods and earthquakes. Human-caused incidents can also represent shocks, such as a terrorist attack. A **stressor** is a long-term trend that undermines a community's potential and overall well-being. Examples of chronic stressors include homelessness, mental illness, and substance abuse disorder.
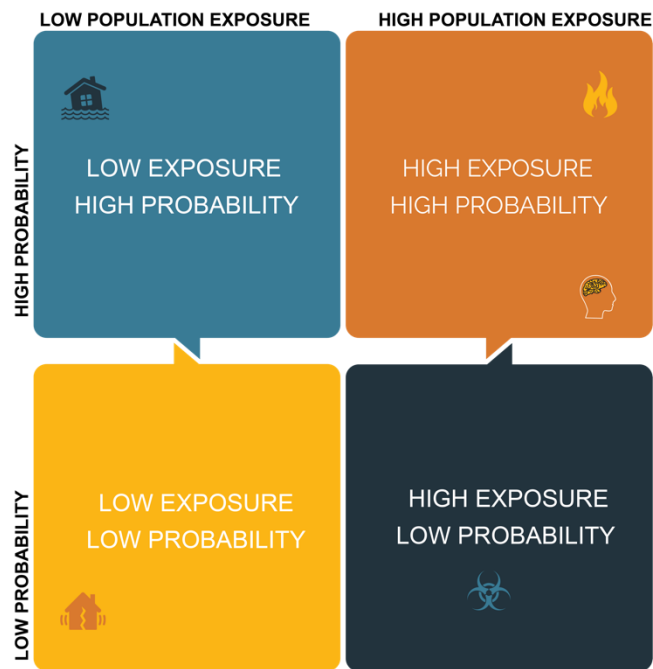
Wildfires are the most prevalent and costly acute shock facing the County of San Diego. This is especially true within the County's unincorporated area. Since 1950, wildfires have burned more than 1,000,000 of the region's 2,897,000 acres. In the last decade, two major wildfires burned more than 300,000 acres, causing approximately $2 billion in damages. Further, roughly 91% of unincorporated county residents live within Very High Fire Severity Zones compared to the statewide average of 7%.   Wildfires that occur within Very High Fire Severity Zones threaten over 90,000 citizens and approximately $12 billion to residential and commercial infrastructure[1].

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[1] San Diego County. "The Multi-Jurisdictional Hazard Mitigation Plan," October, 2017.

Resilience Review Working Group Objective

In March 2019, the Chief Administrative Officer tasked the Chief Resilience Officer and the Resilience Review Working Group with developing recommendations to strengthen community resilience by improving the County's capacity to prepare for, respond to, and recover from, wildfires within the unincorporated area.

Resilience Review Approach

The Working Group developed recommendations that include both overarching objectives and specific tasks in order to achieve those objectives. Each objective and task are assigned to specific County departments and carry estimated implementation and completion dates. Finally, associated costs and resource requirements are designed to capture financial impacts.

In developing these recommendations, the Working Group relied upon personal subject matter expertise and peer-reviewed outside research. Input taken into consideration included direction from the Board of Supervisors, feedback from key stakeholders, current County strategies and plans, and guidelines set forth in federal and state preparedness frameworks.

The Working Group also assessed other internal and external reports. This included the County's major wildfire after action reports, the California Governor's Strike Force findings, the California Department Forestry & Fire Protection's (CAL FIRE) February 2019 Community Wildfire Prevention and Mitigation Report, the California Commission on Catastrophic Wildfire Cost and Recovery Report, and state and local news coverage. In addition, the Working Group solicited input from external subject matter experts, local residents, and other public and private sector stakeholders.

Resist	Prepare	Recover	Adapt	Transform
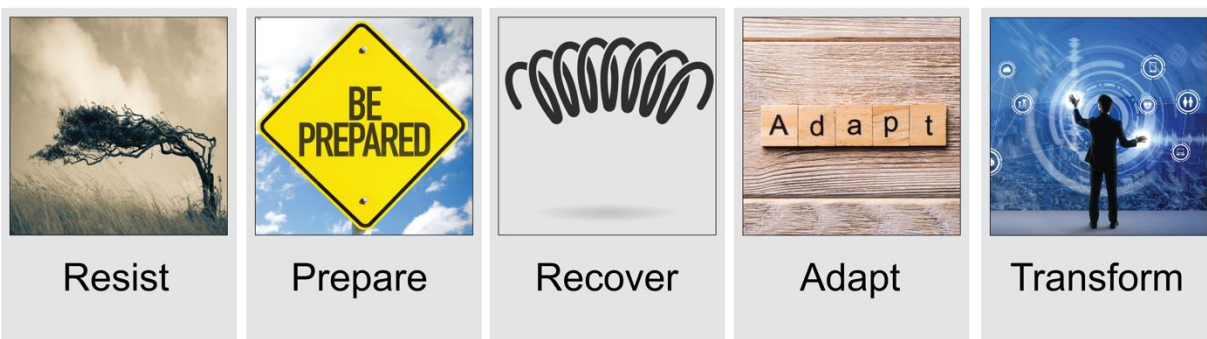
The National Preparedness Goal and Planning Frameworks

The Working Group's assessment of the County's wildfire response and recovery capabilities were guided by the Department of Homeland Security's National Preparedness Goal and associated National Response and Recovery Frameworks. The National Preparedness Goal is a whole of community "aiming point" where specific critical capabilities are applied across five mission areas – **Prevention**, **Protection**, **Mitigation**, **Response** and **Recovery**. There are 32 core capabilities designed to help achieve the preparedness goal. Each mission area draws on a unique set of those capabilities to establish a level of preparedness and security that enables communities to thrive in the face of physical, social, and economic challenges. After a review of the County's current core capabilities, the Working Group determined that **8 of the 15 Response** core capabilities and **6 of the 8 Recovery** core capabilities required further assessment. The figure below highlights the core capabilities selected for assessment by the Working Group.

FEMA RESPONSE CORE CAPABILIITES	FEMA RECOVERY CORE CAPABILIITES
Planning	*Planning*
Public information and warning	*Public information and warning*
Operational coordination	*Operational coordination*
Critical transportation	*Economic recovery*
Fire management and suppression	*Health and Social Services*
Logistics and supply chain management	*Housing*
Search and rescue operations	
Operational communications	

Resilience Review Working Group

The Working Group was composed of a multidisciplinary team of experts from various County departments. This included representatives from three of the County's four business groups: Public Safety Group, Land Use and Environment Group, and the Health and Human Services Agency.

Departments represented in the Working Group included:

- County Fire Authority (FA)
- Sheriff's Department (SO)
- Office of Emergency Services (OES)
- Department of Animal Services (DAS)
- Planning and Development Services (PDS)
- Department of Public Works (DPW)
- Department of Parks and Recreation (DPR)

- Department of Environmental Health (DEH)
- Department of Public Health (PHS)
- Department of Behavioral Health (BHS)
- Emergency Medical Services (EMS)
- Housing and Community Development (HCD)
- County Counsel

External Stakeholders included:

- San Diego Gas & Electric (SDG&E)
- California Department of Transportation (Caltrans)
- California Department of Forestry & Fire Protection (CAL FIRE)

- Sierra Club of San Diego
- Endangered Habitat League
- Chaparral Institute
- Fire Safe Councils of San Diego County (FSC)

Recommendations and Support Findings

Pre-Wildfire Recommendations

The implementation of wildfire protection and mitigation (pre-fire) safety enhancements can save lives, reduce damage, accelerate recovery and reduce costs. Described below are the Working Group's findings and recommended objectives.

The five pre-fire objectives contained in this report originated from a March 12, 2019 County Board of Supervisor's (Board) action directing the County Chief Administrative Officer (CAO) to develop a plan based on these objectives that would strengthen wildfire protection in existing and future communities and return with recommendations in 90 days. Subsequently, the CAO directed the Public Safety Group (County Fire) to lead the planning. The Working Group partnered with County Fire and rapidly developed a plan to accomplish the five objectives. On June 4, 2019, the Board approved the plan. The County Fire Authority and CAL FIRE, working as one department – County Fire – provide fire and emergency medical services across 1.5 million acres of unincorporated San Diego County. County Fire has initiated implementation of these objectives. The analysis conducted to develop this plan, and tasks associated with accomplishing those five objectives, were supported by the Working Group and incorporated in this report.

PRE FIRE OBJECTIVES

A. Develop and implement a more cohesive pre-fire strategy
B. Enhance pre-fire vegetation management
C. Improve pre-fire emergency planning
D. Strengthen fire safety measures in new construction
E. Reduce potential for wildfire loss in existing structures

PRE-FIRE OBJECTIVE A: *Develop and implement a more cohesive pre-fire strategy, including expanding and increasing support to local Fire Safe Councils.*

LEAD: County Fire Authority		SUPPORT: OES, SO, CCO, CAL FIRE, Fire Safe Councils			
TASK		**LEAD**	**SUPPORT**	*EST COMP DATE*	*EST COST/ RESOURCES*
A.1	Develop a program, that provides the goals and strategies needed to strengthen community preparedness for wildfires. Components include financial opportunities (Grants), vegetation management, community education, structure hardening and technology.	FA	OES, SO, CAL FIRE, Fire Safe Councils	Phase 1: Jan-2021 Phase 2: TBD Phase 3: TBD	$80K/year (FY20-21 Budget Request /ongoing)
A.2	Expand support to the County's Fire Safe Councils in the areas of structural hardening grants, wildfire preparedness planning and coordination, and information sharing.	FA	OES, CAL FIRE, Fire Safe Councils	Phase 1: Jan-2021 Phase 2: TBD Phase 3: TBD	Staff Hours
A.3	Develop a regional public communications strategy that demonstrates the County's continued efforts to better prepare for, prevent, mitigate, respond to, and recover from the threat of wildland fires.	OES	PSG GCO, FA, CCO	N/A (on-going)	Staff Hours
A.4	In cooperation with Fire Safe Councils, develop and implement County Fire-Taught Wildland Urban Interface courses for at-risk communities.	FA	Fire Safe Councils, CAL FIRE	Jul-20	Staff Hours
A.5	Hire environmental scientist to CAL FIRE San Diego Unit to ensure compliance with environmental requirements related to wildfire mitigation within the region.	PSG	FA, DHR	Mar-20	$178K (State funded/ongoing)

PRE-FIRE OBJECTIVE B: *Enhance pre-fire vegetation management, including expanding community chipping programs, working with federal, state and local agencies to develop a cooperative vegetation management plan, and pursue legislative changes to reduce or eliminate burdensome environmental regulations for controlled burns, and fire breaks to protect life and property.*

LEAD: County Fire Authority			SUPPORT: CAL FIRE, DPW, State & Fed Resource Agencies, Fire Safe Councils		
TASK		**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
B.1	Update vegetation management plans in cooperation with state and federal agencies to evaluate and treat vegetation.	FA	CAL FIRE, DPW, DPR, State and Federal Resource Agencies	Jul-20	Staff Hours
B.2	Update and adopt County Fire / Unit Fire Plans that reflect historical, current and future vegetation treatment projects.	FA	CAL FIRE	Jun-2020 (on-going)	Staff Hours
B.3	Identify funding for and implement a program that provides for 25 community chipping day events in at-risk communities.	FA	County Counsel, DPC, DHR, CAL FIRE	Jul-21	$35K/year (FY20-21 Budget Request/on-going)
B.4	Add to the Board of Supervisor's Legislative Program support for legislation that would facilitate more expeditious environmental review of fuels management projects to protect life and property.	OSIA	FA	N/A	Staff Hours
B.5	Staff the Community Risk Reduction Program to meet current and future needs.	FA	DHR	Jun-20	$1.2 million (FY19-20 budgeted/ongoing)

PRE-FIRE OBJECTIVE C: *Improve pre-fire emergency planning, including enhancing our existing technology and GIS mapping to better protect at-risk communities.*					
LEAD: County Fire Authority			**SUPPORT**: CALFIRE, Fire Safe Councils, OES, SO, DPW, CCO		
	TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
C.1	Enhance GIS mapping capability to better protect at-risk communities.	FA	OES, CAL FIRE	Nov-19	Staff Hours
C.2	Sustain Regional Public Safety Geodatabase (RPSG).	FA	OES, City of San Diego, and other local fire dispatch centers	NA (ongoing)	$500K/year (grant/will pursue)
C.3	Produce and provide requisite paper fire maps and map books with public safety grids for fire and law enforcement response personnel within Operating Area.	FA	CAL FIRE	Sep-19	$80K/year (grant/will pursue)
C.4	Update Wildland Prevention Plans for all at-risk communities.	FA	CAL FIRE, SO, OES, Regional Fire Safe Council	Jul-24	$100K/year (FY19-20 budgeted) + $150K/year (FY20-21 Budget Request/ ongoing)
C.5	Install electronic wall map displays in all County fire stations.	FA	CAL FIRE	Dependent on receipt of grant funding	Staff Hours
C.6	Sustain Evacuation Ready Training for local fire and law enforcement personnel.	SO	FA, OES, SDG&E, CAL FIRE	Jul-2019 (& ongoing)	Staff Hours
C.7	Work with Fire Safe Councils and develop a community evacuation planning template for inclusion in Community Wildfire Protection Plans.	FA	SO, OES, FSC, CAL FIRE, Caltrans, PDS, DPW	Sep-20	Staff Hours
C.8	Enhance County Fire Authority website to include more dynamic design and additional outreach resources.	FA	Perspecta, CCO	Jul-20	$130K (grant/will pursue)

PRE-FIRE OBJECTIVE D: Strengthen fire safety measures in new construction, including stricter building requirements in the fire code for homes built in high fire risk areas.				
LEAD: County Fire Authority		**SUPPORT**: PDS, CAL FIRE, County Counsel		
TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
D.1 Adopt the 2019 CA Building Code and pursue County amendments that include structure hardening requirements for new construction in fire prone areas.	FA	PDS, CAL FIRE	Mar-20	Staff Hours
D.2 Adopt and implement 2019 CA Fire Code with County amendments.	FA	CAL FIRE, County Counsel, PDS	Mar-20	Staff Hours

PRE-FIRE OBJECTIVE E: *Reduce loss from wildfires in existing structures, including increasing the frequency of defensible space inspections and the development of a grant program for fire resistant building improvements.*				
LEAD: County Fire Authority		**SUPPORT**: CALFIRE, PSG GCO, OES, CCO, PDS, HCD, County Counsel, Fire Safe Councils		
TASK		**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
E.1	Develop an outreach plan to educate and connect communities with resources to strengthen and retrofit existing structures to reduce loss from wildfires.	FA	CCO, OES, CAL FIRE, PDS, HCD	Jul-2020	Staff Hours
E.2	Increase the number of defensible space inspections within State Responsibility Area to 20,000 annually.	FA	CAL FIRE	Oct-2020	$360K/year (one-time /FY19-20 budgeted)
E.3	Establish a pilot County program that facilitates installation of ember resistant vents on existing structures in at-risk communities.	FA	CAL FIRE, DPC, County Counsel, PDS	Jul-2020	$1.5M (one-time/FY19-20 budgeted)
E.4	Establish a program for residential Knox Box installation for individuals with access and functional needs in County Service Area 135.	FA	CAL FIRE, OES, DPC, SO, County Counsel AIS, SDG&E	Oct-2020	$50K/year (grant/will pursue)

Support Findings

- The Working Group determined that the County Fire Authority, working closely with CAL FIRE and other state and local agencies, had already begun working on many of the pre-fire safety enhancements in advance of this wildfire resilience review. This report's recommendations, along with the detailed planning and analysis used to develop them, will be incorporated into the ongoing planning and development of County Fire's 2019-2024 Strategic Plan.

- Investment in wildfire mitigation measures often reflects a benefit to cost ratio of 4:1 – a savings of $4 for every $1 spent on wildfire protection and mitigation.[2] During the 2003 Firestorms (Cedar, Paradise, Otay) suppression (firefighting) costs exceeded $38.5 million. During the 2007 Firestorms (Witch Creek, Harris, Poomacha, Rice), suppression costs exceeded $65 million. Estimated damages for both firestorms reached nearly $4 billion. When considering these costs in relation to a 4:1 benefit-cost ratio, the investment in pre-fire safety enhancements makes fiscal sense.

Wildfire Response Recommendations

The actions taken during the initial minutes of a wildfire are critical. Over the last 15 years, San Diego County has invested more than $500 million to enhance its core local fire and emergency response capabilities to quickly suppress fires. This investment has enabled the County to build the most robust single, locally stationed wildland fire suppression capability in the nation.

> *Assessing Response Capabilities*
>
> *95% of wildfires in San Diego County are kept under five acres. This is a key indicator of the County's superior fire management and suppression capability.*

The Working Group used the Department of Homeland Security National Response Framework to analyze the County response capacity. The DHS response framework outlines 15 core capabilities required during incident response. The Working Group decided to focus on further improving eight of the County's response capabilities. The recommended objectives and tasks will enhance the County's capabilities in these areas:

- Planning
- Public information and warning
- Operational coordination
- Critical transportation

- Fire management and suppression
- Logistics and supply chain management
- Search and rescue operations
- Operational communications

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[2] FEMA. "Natural Hazard Mitigation Saves," December, 2017.

RESPONSE OBJECTIVES

A. Increase County Fire's firefighting capabilities

B. Enhance accessible transportation and evacuation services

C. Increase operational coordination capacity

D. Increase operational communications capacity

E. Improve rapid restoration of essential services and systems

F. Enhance delivery methods for public information and warning

G. Enhance search and rescue capabilities

RESPONSE OBJECTIVE A: *Increase County Fire's firefighting capabilities to manage and suppress wildfires within the unincorporated area while protecting the lives, property, and the environment.*					
LEAD: County Fire Authority			**SUPPORT**: CAL FIRE, SO, PDS, DPW, DPC, OES		
	TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
A.1	In accordance with the CA FY 2019-20 Budget Act, update County Fire's Strategic Plan and determine capability enhancements of its fire protection resources, to include mobile equipment replacements, fire crews, health and protection program employees, enhanced staffing levels, and facilities repairs and upgrades.	FA	CAL FIRE, SO	Jul-2020 (ongoing)	Staff Hours
A.2	Procure and install additional and / or upgraded ground and aviation fire detection cameras to provide advanced data to firefighters and support agencies.	FA	CAL FIRE, DPC, SDG&E	Aug-2022	$470K (ground) (FY19-20/budgeted) $TBD (aviation)
A.3	Support the planned basing of a C-130 air-tanker at Ramona Airport to support suppression missions within the Operating Area.	FA	CAL FIRE, PDS, DPW, OSIA	Aug-2021	Staff Hours

	RESPONSE OBJECTIVE B: Enhance current accessible transportation services during wildfire response, including the evacuation of people (including those with access and functional needs) and animals, and the delivery of vital response personnel, equipment, and services into the affected areas.				

LEAD: County Fire Authority			SUPPORT: CAL FIRE, SO, OES, DPW, DAS, Caltrans, AIS, EMS, CHP, DOD, County Counsel		
	TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
B.1	Support CAL FIRE efforts to identify housing subdivisions that lack an adequate secondary egress route in all State and Local Responsibility Areas mapped as Very High Fire Hazard Severity Zones.	CAL FIRE / FA	SO, DPW, HCD, Caltrans, EMS	Jul-2021	Staff Hours
B.2	Establish a standard County operating procedure for large animal evacuations during a major wildfire.	DAS	OES, FA, SO	Dec-2019	Staff Hours
B.3	Establish Neighborhood Evacuation Team Program that will enhance the ability of residents with access and functional needs to evacuate in the face of a major wildfire.	OES	AIS, FA, SO	Jul-2020	$15K/year (grant/pending approval)

| RESPONSE OBJECTIVE C: Increase capacity to manage the unified and operational structure and coordination process that appropriately integrates all critical stakeholders and supports the execution of core capabilities in response to and recovery from major wildfires. |

LEAD: OES	SUPPORT: Cal OES, All departments required to staff OA EOC, DHR

	TASK	LEAD	SUPPORT	EST COMP DATE	EST COST/ RESOURCES
C.1	Assess County Emergency Operations Center (EOC) staffing levels required to adequately staff the Operational Area EOC and Recovery Operations Center during sustained 24-hour wildfire response and recovery operations.	OES / PDS	All departments with EOC and ROC responder requirements, DHR	Jul-2020	Staff Hours
C.2	Update County Operational Area EOC staff training curriculum in accordance with State and Federal curriculum requirements.	OES	Cal OES	Jul-2020	Staff Hours

RESPONSE OBJECTIVE F: *Enhance the delivery of coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding a major wildfire. This includes updates on actions being taken and available assistance.*

LEAD: OES		SUPPORT: FA, SO, CAL FIRE, CCO, SDG&E, 211, State & Fed Agencies, Select LUEG, HHSA Departments			
	TASK	LEAD	SUPPORT	EST COMP DATE	EST COST/ RESOURCES
F.1	Implement new CA Alert and Warning Guidelines to enhance the County's ability to provide timely and informative public alerts and notifications of wildfires.	OES	Cal OES	Nov-2019 (& on-going)	Staff Hours
F.2	Develop general messaging templates that provide public information on sources of assistance, types of donations needed, respiratory and health impacts, basic safety, alternate power, hazardous materials, road closures, re-entry announcements and procedures.	OES	CCO, PHS, DEH, BHS, SO, APCD, DPW	Dec-2019	Staff Hours
F.3	Redesign and improve SDCountyEmergency.com and ReadySanDiego.org and corresponding Spanish sites to make more user friendly.	OES	CTO, CCO, Perspecta	Oct-2020	$1.25M (grant/will pursue)

RESPONSE OBJECTIVE G: *Enhance the County's ability to deliver traditional and atypical wildfire search and rescue capabilities with the goal of saving the greatest number of lives in the shortest time possible.*

LEAD: County Fire Authority		SUPPORT: CAL FIRE, SO, EMS, Select City Fire Departments			
	TASK	LEAD	SUPPORT	EST COMP DATE	EST COST/ RESOURCES
G.1	Establish four Heavy Rescue Units (Urban Search and Rescue) to increase the County's Technical Rescue capabilities.	FA	CAL FIRE	Sep-2019	Staff Hours
G.2	Establish a Memorandum of Agreement with Carlsbad Fire, San Marcos Fire, and Escondido Fire to create a Joint County Technical Rescue Team.	FA	CALFIRE, Carlsbad FD, San Marcos FD, Escondido FD	Jan-2020	$40K/year (FY20-21 Budget Request/ongoing)

Support Findings

- The 2003 and 2007 firestorms demonstrated that during times of crisis, San Diego County's extreme southern location makes it isolated from national and state fire suppression resources. Santa Ana windstorms tend to start in the north, and in both years, major fires had already started north of the County and consumed most state and federal resources. As a result of this historic trend, the Working Group recommends continual investment in developing local wildland response capabilities to allow the County to independently sustain operations for 72 hours.

Wildfire Recovery Recommendations

Recovering from the disastrous effects of a major wildfire is a crucial component of resilience. The whole community, including government agencies, the private sector, non-governmental organizations, and the public, must collaborate and coordinate to quickly recover.

The Working Group used the Department of Homeland Security's Recovery Framework to assess the County's current recovery operations capabilities within the unincorporated areas. Subsequently, the Working Group develop recommendations for consideration. The six core capabilities addressed by the Working Group included:

- ➢ Planning
- ➢ Public Information
- ➢ Operational Coordination

- ➢ Economic Recovery
- ➢ Health and Social Services
- ➢ Housing

RECOVERY OBJECTIVES

A. Continue debris removal program improvements
B. Implement emergency interim housing solutions
C. Improve health and social services capabilities
D. Increase operational coordination capacity

RECOVERY OBJECTIVE A: Continue to assess and improve the County's management of debris removal in support of recovery operations and determine areas for enhancement and additional investment.					
LEAD: DPW			SUPPORT: OES, DPC, FA, DPR, DEH, DGS, PHS		
	TASK	LEAD	SUPPORT	EST COMP DATE	EST COST/ RESOURCES
A.1	Complete the development of a comprehensive County Debris Management Framework that addresses estimation, monitoring, removal, storage, and disposal of debris resulting from a major wildfire in the unincorporated areas.	DPW	OES, DGS, DPC, DPR	Jun-2021	$200K (grant/will pursue)
A.2	Identify debris / bio-hazard destinations and determine their impact on landfill lifespans.	DPW	DEH	Aug-2019	Staff Hours

RECOVERY OBJECTIVE B: Implement emergency interim housing options that effectively support the needs of the whole community and contribute to its sustainability and resilience, subsequent to a major wildfire.					
LEAD: DPR			SUPPORT: HCD, OES, DPC, IS, DGS, FG3		
	TASK	LEAD	SUPPORT	EST COMP DATE	EST COST/ RESOURCES
B.1	Develop a framework for establishing short and long-term interim housing options and support programs for persons experiencing homelessness as a result of a major wildfire in the unincorporated areas.	HCD	DPR, OES, FG3	Dec-2020	$TBD/Staff Hours
B.2	Develop Emergency Interim Housing administrative tools and processes that improve the speed and efficiency in providing emergency interim housing options subsequent to a major wildfire in the unincorporated areas.	DPR	HCD, OES, DPC, DGS, IS	Jul-2021	Staff Hours

RECOVERY OBJECTIVE C: *Improve health and social services capabilities and networks to promote the resilience, independence, health (including behavioral health), and well-being of the whole community following a major wildfire.*

LEAD: H&CD		SUPPORT: PHS, BHS, IS, OES, DHR		
TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/RESOURCE**
C.1 Procure and employ the Live Well Mobile Office to enhance Local Assistance Center health and social services capabilities during wildfire response and recovery operations.	HHSA-EO	PHS, BHS, HCD, OMVA, OES	Mar-20	$490,254 (FY19-20 budgeted)

RECOVERY OBJECTIVE D: *Increase capacity to manage the unified and operational structure and coordination process that appropriately integrates all critical stakeholders and supports the execution of core capabilities in response to and recovery from major wildfires.*

LEAD: OES		SUPPORT: Select LUEG and HHSA Depts, FA, SO, VOAD		
TASK	**LEAD**	**SUPPORT**	**EST COMP DATE**	**EST COST/ RESOURCES**
D.1 Develop a multi-year Recovery Training and Exercise Program that includes all appropriate stakeholders in order to exercise the 2019 County Operational Area Recovery Plan and identify strengths and areas for improvement.	OES	Select LUEG and HHSA departments, FA, SO, VOAD	Dec-2021	$84K (grant/will pursue)
D.2 Develop plans and procedures to handle an influx of spontaneous volunteers.	OES	VOAD	Jan-2021	$75K (grant/currently funded)

Supporting Findings

- The County is assisting in the development of robust debris removal and emergency interim housing frameworks within the unincorporated areas. Departmental staffs within the County's Land Use and Environment Group, Public Safety Group, and Health and Human Services Agency are currently coordinating to develop frameworks, identify potential resources, and build administrative capacity.

- The 2018 Camp Fire in Butte County highlighted the importance of debris removal and interim housing. According to CalRecycle, a total of 2,193,757 tons of debris (or almost 4.4 billion pounds) have been removed from the areas affected by the Camp Fire – including 31,013 tons of metal; 1,741,418 tons of debris, ash and contaminated soil; and 421,326 tons of concrete. Challenges associated with managing debris removal range from rapid debris removal contracting, removal costs, traffic congestion, roadway wear and tear, landfill capacity, health concerns, hazardous materials, and more.

- In the area of housing, the Camp Fire destroyed approximately 14,000 homes. This tremendous level of devastation highlighted the need for a variety of interim housing, including short, medium, and long-term. Having plans and processes in place to address an interim housing crisis is a core capability required in FEMA's Recovery Framework.

Ongoing Initiative / Activity

- The San Diego County Operational Area Recovery Plan is expected to be presented to the County Board of Supervisors for consideration in September 2019. This recovery document will provide a comprehensive framework for countywide recovery planning and operations. This plan also ensures consistency with current federal planning guidance and describes the County's interrelationships with other levels of government.

Moving Forward: A Call to Action

A major wildfire within San Diego County can severely impact lives, property, and our environment. Wildfires can also lead to grave consequences when it comes to the County's economic security, public health, and safety. The magnitude of this threat requires that County government:

- Establish and execute clearly understood authorities
- Effectively and rapidly facilitate emergency alerts and information to the public
- Provide clear-cut guidance and incentives for mitigation activities prior to the occurrence of wildfire
- Deliver resources, including funding, expertise, and decision-making capabilities

Doing so requires County government to serve as the lead collaborator and coordinator for all resilience activities before, during and after a major wildfire. Strong and effective public-private collaboration will be crucial to the level of community resilience achieved.

Currently there are several state-level initiatives that warrant review by appropriate County departments. Of particular note are the California Governor's wildfire protection and cost and recovery initiatives described below.

Executive Order N-05-19
In January 2019, the California Governor Gavin Newsom issued Executive Order N-05-19 directing the California Department of Forestry and Fire Protection (CAL FIRE) to recommend immediate, medium, and long-term actions to help prevent destructive wildfires.[3]

Governor's Strike Force Report
The following month, Newsom created a "Strike Force" charged with developing a comprehensive roadmap to address wildfires.[4]   Then in March, the Governor proclaimed a state of emergency as a result of the vast tree die-off which has significantly increased the state's risk of wildfires.[5]

Commission on Catastrophic Wildfire Cost and Recovery
In June 2019, the Governor's Office of Planning and Research submitted a report developed by the California Commission on Catastrophic Wildfire Cost and Recovery. In it, the Commission laid out 22 recommendations on topics ranging from utility liability, funding (Wildfire Victims Fund), insurance, and wildfire risk reduction. Many of these recommendations are currently being considered through the State's legislative process. Collectively, these initiatives are already impacting the County and the region.

The Wildfire Resilience Review Report recommendations provide a deliberate and disciplined approach for improving select core capabilities required to prepare for, respond to, and recovery from catastrophic wildfires. By improving core capabilities, the County can reduce wildfire risk and lessen community vulnerability. A community that is less vulnerable, is more resilient. This is a community where its people possess a level of preparedness and sense of security that enables them to thrive in face of the physical, social, and economic challenges of the 21st century.

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[3] California Department of Forestry and Fire Protection. "Community Wildfire Prevention and Mitigation Report," February, 2019.
[4] Office of the Governor or California. "Wildfires and Climate Change, California's Energy Future; A Report from Governor Newsom's Strike Force," April 2019.
[5] Executive Department, State of California. "Proclamation of a State of Emergency," March, 2019.

APPENDIX:

Appendix A: Planning and Analysis Methodology

The County has steadily improved its ability to prepare for, respond to, and recover from wildfires. Since 2003, the County's Board of Supervisors has spent roughly $500 million on local firefighting resources ranging from helicopters, engines, and crews, to communications infrastructure. Federal and state entities have also identified and incorporated lessons learned from large scale wildfires such as those highlighted in this report. While the local, state and federal governments should be applauded for their progress, more can be done to reduce the risk of wildfires especially before the fire starts.

Resilience Review Working Group: Topics Addressed

The County will continue to face the threat of wildfires. As such, further action is required to prepare for, respond to, and recover from such a catastrophic disaster that can create significant loss of life, damage to property, and devastating impact on the environment like a wildfire.

Members of the Working Group addressed the following questions throughout the Resilience Review Process to determine which specific and measurable actions the County could take to reduce wildfire risk and strengthen community resilience in the region:

1. What investments, and approaches, are needed in infrastructure systems, land use, fire-fighting capabilities, information sharing, and community engagement to minimize the exposure, duration, extent, and recovery time for large-scale wildfires? What are the roles of the public and private sectors in these investments?
2. What critical factors are required to increase the level of community involvement in preparing for, responding to, and rapidly recovering from wildfires?
3. What is the County's level of readiness to respond to a major wildfire? What can be done to improve readiness, including applicable areas such as public alert and early warning?
4. What are the key trends, recommendations and lessons learned from past large-scale wildfires? Is the County acting upon those recommendations?
5. Does the public appreciate their community's vulnerability to wildfires? Is the region's diverse population taken into account when communicating wildfire risk?
6. Where do the County's goals and objectives outlined in the Multi-Jurisdictional Hazard Mitigation Plan fit in regard to preparedness activities?
7. Are our current Memorandums of Agreement or Mutual Aid Agreements sufficient? Are additional agreements required?
8. What are the statuses of Community Emergency Response Team's (CERT) and Fire Safe Councils (FSC) in the county and what can be done to improve and increase support for them?
9. What is the status of the region Community Wildfire Protection Plans (CWPP) and what can be done to improve them?

Planning Approach

The Resilience Review Working Group was composed of 33 subject matter experts from multiple County departments and led by the Chief Resilience Officer. Private and public sector organizations were also invited to participate in the planning process as needed. On March 29, the Working Group began its detailed planning process, which included problem framing, threat analysis, mission analysis, task analysis, and a comprehensive capability assessment. The objectives and tasks developed in this process reflect specific core capabilities outlined by the National Planning Frameworks – protection, mitigation, response and recovery.

Each objective and task was assigned to a specific County department lead, with other departments listed as supporting. The Working Group developed implementation and completion dates, and estimated costs (where applicable). The Working Group's recommendations, and supporting objectives and tasks, were compiled into a draft Resilience Review Report and shared with corresponding executive groups for final input and refinement. A final report was then submitted to the County Chief Administrative Officer for review and endorsement. Upon endorsement, the report is presented to the County Board of Supervisors for consideration and action.

The Working Group's recommendations aim to accomplish two essential tasks: Develop and implement fire safety enhancements that strengthen community resilience and demonstrate the County's continued efforts to better prepare for, respond to, and recover from wildfires.

The Working Group conducted the following activities throughout the Resilience Review Process:

- **Held 12 formal planning meetings** from March through August 2019
- **Researched and reviewed hundreds of reference documents** including pertinent County plans, policies, programs, and projects related to wildfires
- **Interviewed over 25 senior leaders and wildfire subject matter experts** inside and outside the County government
- **Participated in multiple regional-level Fire Safe Council meetings** to determine the critical factors required to increase community involvement
- **Led multiple collaborative meetings** with local environmental groups and Fire Safe Council members
- **Participated in fire suppression training** exercises
- **Leveraged wildfire lessons learned** and other documentary information
- **Defined catastrophic wildfire and wildfire resilience** to frame planning and analysis, conduct key leader engagements and interviews, and formulate report recommendations

Appendix B: Key Terms and Definitions

This appendix details the Working Group's definitions of Catastrophic Wildfire and Wildfire Resilience. This Appendix also provides a glossary of terms referenced in the report.

I. Catastrophic Wildfire Definition

For this Resilience Review, the Working Group chose to use the Department of Homeland Security's definition of a catastrophic incident to help define a Catastrophic Wildfire. The catastrophic incident definition comes out of the National Response Framework.

The Working Group defined catastrophic wildfires as:

Events that result in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, and / or government functions.

The Working Group outlined an additional six criteria to help define a Catastrophic Wildfire:

1. **These fires are likely to be caused by no-notice or short-notice events** such as:
   a. Periods of excessive heat and drought
   b. Periods of high winds (Santa Ana's)
   c. Geographic areas where wildland and urban areas merge – Wildland-Urban Interface
   d. Geographic areas covering multiple jurisdictions

2. **These fires require an extended duration response**, requiring response resources to be committed for days or weeks to fully contain and extinguish.

3. **Responding to these fires exhausts local emergency response capabilities** and requires mutual aid agreements and / or proclamations and declarations of a local or national disaster.

4. **These fires directly and indirectly affect a broad geographic area of the County**, impacting the citizens, governments, and economics of multiple jurisdictions.

5. **These fires have cascading effects that will negatively impact multiple critical sectors**, such as utilities, communications, transportation, healthcare, water and wastewater systems, and financial services.

6. **The Recovery period after a catastrophic fire is costly and takes months to years**, in some extreme cases a community may never be able to fully recover.

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II. Wildfire Resilience Definition

The Working Group defined **Wildfire Resilience** as:

The capacity of the County government, its citizens, organizations or systems to adapt and thrive in the face of the omnipresent threat of wildfires and ability to withstand and rapidly recover from disruption due to a catastrophic wildfire occurring.

Wildfire resilience can also be understood as it relates to capacity:

- o **RESISTANCE** – The capacity to withstand or absorb the effects of a major wildfire

- o **PREPAREDNESS** – The capacity to cope with temporary disruption while minimizing the damages and costs due to a major wildfire

- o **RECOVERY** – The capacity to restore or bounce back after a major wildfire

- o **ADAPTATION** – The capacity to manage or maintain basic functions and structures

- o **TRANSFORMATION** – The capacity to create opportunities to positively change or improve capabilities and behaviors in the face of future catastrophic wildfires

III. Glossary of Key Terms

Capability: Possessing the means to accomplish one or more actions or tasks under specific conditions and to specific performance standards to achieve a desired outcome. (**DHS**, Universal Task List, 2.1, 2005, P B-1 (142))

Capacity: Combination of all strengths and resources available within a community, society, or organization that can reduce the level of risk or the effects of a disaster. (**UN/ISDR**, Terminology, Basic Terms of Disaster Risk Reduction, 2004, p. 1)

Chief Administrative Officer: The County of San Diego's highest-ranking executive that is appointed by the Board of Supervisors to carry out the Board's policy decisions and to ensure the effective administration of County government. (**San Diego County**, Best County in the Nation, How the General Management System will get us there, not dated, p. 17)

Deputy Chief Administrative Officer: One of four general managers for San Diego County, this position is charged with overseeing a Group Executive Office and all departments and staff under its authority. (**San Diego County**, Best County in the Nation, How the General Management System will get us there, not dated, p. 17)

Disaster: An occurrence of a natural catastrophe, technological accident, or human-caused event that has resulted in severe property damage, deaths, and/or multiple injuries. (**FEMA**, Guide for All-Hazard Emergency Operations Planning, 1996, p. GLO-1)

Exposure: People, property, systems, or functions that could be lost to a hazard. (**FEMA**, IS-393.b Introduction to Hazard Mitigation)

Functional Threading: A component of the San Diego County government's General Management System that helps ensures all areas of the County government work together to meet goals set in both the Strategic and Operational Plans. (**San Diego County**, Best County in the Nation, How the General Management System will get us there, not dated, p. 11)

Goal: General guidelines that determine what is to be accomplished or achieved. (**FEMA,** Developing the Mitigation Plan (FEMA 386-3), 2003, p. 1-1)

Hazard: A potential event or situation that presents a threat to life and property. (**FEMA**, Hazards Analysis for Emergency Management (Interim Guidance), 1983, p. 5)

National Planning Frameworks: Part of the National Preparedness System, these provide the strategy and doctrine for building, sustaining, and delivering the core capabilities identified in the National Preparedness Goal. (**DHS**, Overview of the National Planning Frameworks, June 2016)

National Preparedness Goal: "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk." (**DHS**, National Preparedness Goal, Second Edition, Sep 2015)

Objective: A purpose to be achieved, a result to be obtained, a product to be produced, or a service to be performed. (**DHS,** Fiscal Year 2007 Homeland Security Grant Program: Investment Justification Reference Guide, 2007, p. 53, Appendix A, Defs.)

Preparedness: Activities necessary to build, sustain, and improve readiness capabilities to prevent, protect against, respond to, and recover from natural or man-made incidents. (**DHS**, Lexicon: Terms and Definitions, 2007, p. 19-20)

Resilience: The ability to recover from, or adjust to, adversity or change. **Extended definition:** The ability of systems, infrastructures, government, business, and citizenry to absorb and/or quickly recover from an adverse event or series of events caused by attack or natural disaster which may cause harm, destruction, or loss of national significance and to restore minimum essential operations and reduce the consequences of its degradation or failure regardless of its cause. (**DHS**, Lexicon: Terms and Definitions, 2007, p. 23)

Resources: Materials, services, staff, finances, or other assets that are transformed to produce a benefit for the public good. (**San Diego County**, Best County in the Nation, How the General Management system will get us there, not dated, p. 17)

Strategic Initiatives: The means through which a vision is translated into practice. The four current initiatives are Building Better Health, Living Safely, Sustainable Environments/Thriving and Operational Excellence and can be found in the Strategic Plan. (**San Diego County**, County Strategic Plan, 2019)

Retrofit: Reinforcement of structures to become more resistant and resilient to the forces of natural hazards. (**UN/ISDR**, Terminology: Basic Terms of Disaster Risk Reduction, March 31, 2004)

Risk: The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. (**FEMA**, IS-393.b Introduction to Hazard Mitigation)

Shock: A sudden event such as an earthquake, flood, fire, terrorist attack, that impacts the vulnerability of the community and its components. (**ACF-International**, Enhancing Resilience to Shocks and Stresses, 2013, p. 4)

Stressor: A long-term trend that undermines the potential and well-being of a community and increases the vulnerability of those within it. (**ACF-International**, Enhancing Resilience to Shocks and Stresses, 2013, p. 4)

Task: A discrete action that enables a function to be accomplished by individuals or organizations. (**Homeland Security Institute**, HS Strategic Planning MAA, March 2007, p. 63)

Threat: Any entity, action, or occurrence, whether natural or man-made, that has or indicates the potential to pose violence or danger to life, information, operations and/or property. (**DHS**, Lexicon: Terms and Definitions, 2007, p. 26)

Vulnerability: The susceptibility of people, property, industry, resources, ecosystems, or historical buildings and artifacts to the negative impact of a disaster. Vulnerability assessment provides the extent of injury and damages that may result from a hazard event of a given intensity in a given area. (**FEMA**, IS-393.b Introduction to Hazard Mitigation)

Wildland fire: Any fire occurring on undeveloped land. (**CALFIRE**, Incident Information, Fire Terminology, cdfdata.fire.ca.gov, 2016)

Appendix C: Individual and Community Preparedness Efforts

Although the County's wildland response and recovery capability is top in the nation, **comprehensive wildfire resiliency requires communities and citizens to be prepared**. Achieving a high level of local preparedness requires local government and community collaboration. Local governments have the resources and expertise, but citizens have a better appreciation of their community's needs. To build resilience through community preparedness, the County develops or supports various programs. These programs educate, build accountability, and foster citizen action and collaboration. These programs also further improve the County's response and recovery capabilities.

This appendix outlines some example programs that contribute to the resiliency of San Diego County.

Examples of Community Wildfire Preparedness and Resiliency

- **Fire Safe Council of San Diego County:** Local Fire Safe Councils (FSC) are community-led organizations that mobilize residents to better prepare themselves for the inevitability of a major wildfire. Local FSCs spearhead local fuel reduction programs, conduct wildfire protection planning, and homeowner wildfire protection training. San Diego County has more Fire Safe Councils than any region in California, being home to 41 of the approximate 150 throughout the state. The mission of the San Diego County FSC is to provide an exchange of information through education and training, and to foster fire prevention and safety throughout the San Diego region. The FSCs of San Diego County promote the protection of life, property and the environment through the multiple programs. These programs include no-cost chipping, defensible space assistance, workshops, and conservation plans.

- **Community Wildfire Protection Plans:** A key by-product of the FSCs are the individual Community Wildfire Protection Plans (CWPP). These plans are developed at the community level in areas at-risk of wildfire. Through a collaborative planning process involving community members, fire agencies, local government, and other key stakeholders, these plans identify and prioritize fuel reduction treatments and methods. Additionally, they make recommendations for measures that reduce structural ignitability. Finally, CWPPs determine priorities for the protection of life, property, and critical infrastructure in the wildland-urban interface (WUI).[6] **In the near future, San Diego County local FSC CWPPs will include evacuation plans to enhance community wildfire risk reduction.**

- **Community Emergency Response Teams:** FEMA's Community Emergency Response Team (CERT) program is a nation-wide program adopted and implemented in all 50 states. The CERT program educates volunteers about disaster preparedness for the hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.[7] San Diego County has 31 active CERT programs with over 1,200 sworn members. CERT training enables local citizens to safely and

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[6] Fire Safe Council of San Diego. "Community Wildfire Protection Plans," 2019. http://firesafesdcounty.org/fsc-support/cwpp-plan/

[7] FEMA. "Community Emergency Response Team." 2019. https://www.ready.gov/community-emergency-response-team

effectively aid their community during an emergency or disaster. CERT training teaches citizens to safely manage utilities, put out small fires, provide lifesaving first aid, perform search and rescue operations, organize spontaneous volunteers, and collect disaster intelligence to support first responders.

- **San Diego County Spontaneous Volunteer Program:** The San Diego County Office of Emergency Services is developing a pioneering Spontaneous Volunteer Program. When implemented, this program will enable more effective, efficient and safe integration of spontaneous community volunteers during response and recovery operations. This program will provide a formalized and standard procedure for non-governmental organizations to coordinate spontaneous unaffiliated volunteers. This program is co-sponsored and coordinated with the region's Volunteer Organizations Active in Disaster (VOAD). This program will be fully implemented across the County by January of 2021.

- **Neighborhood Evacuation Team Program:** The San Diego County Office of Emergency Services is currently developing the Neighborhood Evacuation Team program. Through this program, trained CERT members will volunteer to provide evacuation planning assistance to elderly residents and residents with disabilities or other access and functional needs who are at risk of not being able to self-evacuate during a wildfire. This program will be piloted in 2019 with County Fire CERT members who will assist neighbors in completing a Disaster Preparedness Plan, document emergency contact information, register for AlertSanDiego, and download the SD Emergency App.

Appendix D: Wildfire Lessons Learned

WILDFIRE AFTER ACTION REPORTS: LESSONS LEARNED ANALYSIS

After a major disaster, the County uses the After-Action Report (AAR) process to analyze and improve incident performance. A typical AAR provides in-depth analysis of events, highlights successes, identifies areas for improvement, and makes recommendations for consideration. As part of the Resilience Review process, the Working Group analyzed past County Wildfire AARs and other external wildfire after-action reference material. The County After-Action Reports reviewed include:

- The 2017 Lilac Fire After Action Report
- The May 2014 San Diego County Wildfire After Action Report
- The 2007 San Diego County Firestorms After Action Report
- The 2003 San Diego County Firestorms After Action Report

AAR Analysis and Trends

During this analysis, the Working Group found that **many County plans, programs and activities in place today are a direct result of the County implementing recommendations from past AARs.** The Working Group also discovered trend areas within multiple AARs and other external wildfire reference material that formed the basis for task development. As a result of this analysis, seven trend areas were identified:

- Alert and Warning
- Animals
- EOC Readiness
- Community Preparedness
- Evacuations
- Public Communication
- Technology

Trends and Recommendations

This trend analysis enabled the Working Group to formulate objectives and tasks that would either sustain and / or enhance on-going County AAR-derived wildfire risk reduction activities. Moreover, many of the Working Group recommendations are intended to keep the County "ahead" of the next major wildfire – a proactive rather than reactive approach.

The tables below illustrate the alignment between the trend areas and specific tasks developed by the Working Group. Implementation of these tasks in relation to common wildfire after-action trends will facilitate a proactive approach to reducing community risk to wildfires and strengthening regional wildfire resiliency.

ALERT AND WARNING
-- STAYING AHEAD -- **RESILIENCE REVIEW RECOMMENDATIONS**
RESPONSE TASK F.1 - *Implement new CA Alert and Warning Guidelines to enhance the County's ability to provide timely and informative public alerts and warnings of wildfires.* **RESPONSE TASK F.2** - *Develop general messaging templates related to sources of assistance, types of donations needed, respiratory and health impacts, basic safety, alternate power, hazardous materials, road closures, reentry announcements and procedures, etc.* **RESPONSE TASK F.3** - *Redesign and improve SDCountyEmergency.com and ReadySanDiego.org and corresponding Spanish websites to make more user-friendly and ADA compliant.*

ANIMALS
-- STAYING AHEAD -- **RESILIENCE REVIEW RECOMMENDATIONS**
RESPONSE TASK B.2 - *Establish County standard operating procedure for the large animal evacuations during a major wildfire.*

EOC READINESS
-- STAYING AHEAD -- **RESILIENCE REVIEW RECOMMENDATIONS**
RESPONSE TASK C.1 - *Assess County Emergency Operations Center (EOC) staffing levels required to adequately staff the Operational Area EOC and Recovery Operations Center during sustained 24-hour wildfire response and recovery operations.* **RESPONSE TASK C.2 -** *Update County Operational Area EOC Responder training curriculum in accordance with State and Federal curriculum requirements.*

COMMUNITY PREPAREDNESS

-- STAYING AHEAD --
RESILIENCE REVIEW RECOMMENDATIONS

PRE FIRE A.1 - *Develop community wildfire preparedness program.*

PRE FIRE A.2 - *Expand support to the County's Fire Safe Councils in the areas of structural hardening grants, wildfire preparedness planning and coordination, and information sharing.*

PRE FIRE A.3 - *Develop a regional communications strategy that demonstrates the County's continued efforts to better prepare for, prevent, mitigate, respond to, and recover from the threat of wildland fires.*

PRE FIRE A.4 - *In cooperation with Fire Safe Councils, develop and implement County Fire-taught Wildland Urban Interface course for at-risk communities.*

PRE FIRE B.5 - *Staff the Community Risk Reduction Program to meet current and future needs.*

PRE FIRE C.8 - *Enhance County Fire Authority website to include more dynamic design and additional outreach resources.*

PRE FIRE E.1 - *Develop community outreach plan for retrofitting of existing structures.*

PRE FIRE E.2 - *Increase the number of defensible space inspections within State Responsibility Area to 20,000 annually.*

PRE FIRE E.3 - *Establish a County pilot program that facilitates installation of ember resistant vents on existing structures in at-risk communities.*

RESPONSE F.3 - *Redesign and improve SDCountyEmergency.com and ReadySanDiego.org.*

EVACUATIONS

PRE FIRE C.4 - *Update Wildland Prevention Plans for all at-risk communities.*

PRE FIRE C.6 - *Sustain Evacuation Ready Training for local fire and law enforcement personnel.*

PRE FIRE C.7 - *Work with Fire Safe Councils and develop a community evacuation planning template for inclusion in Community Wildfire Protection Plans.*

PRE FIRE E.4 - *Establish a program for residential Knox Box installation for individuals with access and functional needs in County Service Area 135.*

RESPONSE TASK B.1 - *Support CAL FIRE efforts to Identify existing housing subdivisions that lack an adequate secondary egress route in all State and Local Responsibility Areas mapped as Very High Fire Hazard Severity Zones.*

RESPONSE TASK B.2 - *Establish a standard County operating procedure for large animal evacuations during a major wildfire.*

RESPONSE TASK B.3 - *Establish Neighborhood Evacuation Team Program that will enhance the ability of residents with access and functional needs to evacuate in the face of a major wildfire.*

PUBLIC COMMUNICATION
-- STAYING AHEAD -- **RRWG RECOMMENDATIONS**

PRE FIRE A.1 - *Develop a program that provides the goals and strategies needed to strengthen community preparedness for wildfires. Components include Financial Opportunities (Grants), Vegetation Management, Community Education, Structure Hardening and Technology.*

PRE FIRE A.2 - *Develop a regional communications strategy that demonstrates the County's continued efforts to better prepare for, prevent, mitigate, respond to, and recover from the threat of wildland fires.*

PRE FIRE C.8 - *Enhance County Fire Authority website to include more dynamic design and additional outreach resources.*

RESPONSE TASK F.2 - *Develop general messaging templates that provide public information on sources of assistance, types of donations needed, respiratory and health impacts, basic safety, alternate power, hazardous materials, road closures, re-entry announcements and procedures.*

RESPONSE TASK F.3 - *Redesign and improve SDCountyEmergency.com and ReadySanDiego.org and corresponding Spanish websites to make more user-friendly.*

TECHNOLOGY
-- STAYING AHEAD -- **RRWG RECOMMENDATIONS**
PRE FIRE C.1 - *Enhance GIS mapping capability to better protect at-risk communities.* **PRE FIRE C.2** - *Sustain Regional Public Safety Geodatabase (RPSG).* **PRE FIRE C.5** - *Install electronic wall map displays in all County fire stations.* **PRE FIRE C.8** - Enhance *County Fire Authority website to include more dynamic design and additional outreach resources.* **RESPONSE TASK A.2** - *Procure and install additional ground and aviation fire detection cameras.* **RESPONSE TASK D.1** - *Implement the P25 Digital Mobile Radio System (NextGen Regional Communications System) and transition user agencies to provide increase operational radio communications bandwidth in support of wildfire response operations.* **RESPONSE TASK D.2** - *Procure additional and / or upgraded Radio Repeaters and associated infrastructure to enhance VHF radio reception and transmission in communication compromised areas.* **RESPONSE TASK D.4** - *Assess investment in satellite communications to improve operational communications.* **RESPONSE TASK F.3** - *Redesign and improve SDCountyEmergency.com and ReadySanDiego.org and corresponding Spanish websites to make more user-friendly.*

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County of San Diego

Appendix F: Acknowledgements

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Appendix G: Task Tracker

RESILIENCE REVIEW TASK TRACKER 1-19 (WILDFIRES)

REPORT #: WILDFIRE 1-19							COMPLETED	0	0%
MISSION AREA: PRE FIRE			TOTAL TASKS				IN PROGRESS	24	100%
DATE: 9-9-2019			24				NOT STARTED	0	0%

OBJECTIVE	#	TASK	LEAD	SUPPORT	STATUS	LAST UPDATE	EST COMP DATE	ACTIONS TAKEN	REMARKS
PRE FIRE A	A.1	Develop community wildfire preparedness program	FA	OES, SO, CAL FIRE	IN PROGRESS		Phase 1: Jan-21 Phase 2: TBD Phase 3: TBD		
	A.2	Expand support to Fire Safe Councils	FA	OES, PSG, CAL FIRE, Fire Safe Councils	IN PROGRESS		Phase 1: Jan-21 Phase 2: TBD Phase 3: TBD		
	A.3	Develop regional public wildfire information strategy	OES	CCO, FA, CAL FIRE, SO, PDS	IN PROGRESS		N/A (on-going)		
	A.4	Implement County Fire-Taught Wild Urban Interface classes	FA	Fire Safe Councils, CAL FIRE	IN PROGRESS		Jul-20		
	A.5	Hire environmental scientist to CAL FIRE SD Unit	PSG	FA, HR	IN PROGRESS		Mar-20		
PRE FIRE B	B.1	Update vegetation management plans	FA	CAL FIRE, DPW, DPR, State and Federal Resource Agencies	IN PROGRESS		Jul-20		
	B.2	Update and adopt County Fire Unit Plan	FA	CAL FIRE	IN PROGRESS		Jun-20 (on-going)		
	B.3	Identify funding and implement chipping program	FA	County Counsel, DPC, DHR Risk Management, CAL FIRE	IN PROGRESS		Jul-21		
	B.4	Support legislation to facilitate expeditious environmental review of fuels management projects	OSIA	FA	IN PROGRESS		N/A		
	B.5	Staff Fire Authority Community Risk Reduction Division	FA	DHR	IN PROGRESS		Jun-20		
	C.1	Enhance GIS mapping capability to better protect at-risk communities	FA	OES, CAL FIRE	IN PROGRESS		Nov-19		
	C.2	Sustain Regional Public Safety Geodatabase (RPSG)	FA	OES, City of San Diego, and other local fire dispatch cent	IN PROGRESS		N/A (on-going)		
	C.3	Produce and provide requisite paper fire maps and map books with public safety grids for response forces within Operating Area	FA	CAL FIRE	IN PROGRESS		Sep-19		
	C.4	Update Wildland Prevention Plans for all at-risk communities	FA	CAL FIRE, SO, OES, Regional Fire Safe Council	IN PROGRESS		Jul-24		
PRE FIRE C	C.5	Install electronic wall map displays in all County fire stations	FA	CAL FIRE	IN PROGRESS		Dependent on receipt of grant funding		
	C.6	Sustain Evacuation Ready Training	SO	FA, OES, SDG&E, CAL FIRE	IN PROGRESS		Jul-19 (& on-going)		
	C.7	Work with Fire Safe Councils and develop a community evacuation planning template for inclusion in Community Wildfire Protection Plans	FA	SO, OES, FSC, CAL FIRE, CalTrans, PDS, DPW	IN PROGRESS		Sep-20		
	C.8	Enhance County Fire Authority website	FA	Perspecta, CCO	IN PROGRESS		Jul-20		
PRE FIRE D	D.1	Adopt 2019 CA Building Code and pursue County amendments for structure hardening in new construction	FA	PDS, CAL FIRE	IN PROGRESS		Mar-20		
	D.2	Adopt and implement 2019 CA Fire Code with County amendments	FA	CAL FIRE, County Counsel, PDS	IN PROGRESS		Mar-20		
PRE FIRE E	E.1	Develop community outreach plan for retrofitting of existing structures	FA	CCO, OES, CAL FIRE, PDS, HCDS	IN PROGRESS		Jul-20		
	E.2	Increase number of defensible space inspections	FA	CAL FIRE	IN PROGRESS		Oct-20		
	E.3	Establish grant program for ember resistant vents installation	FA	CAL FIRE, DPC, County Counsel, PDS	IN PROGRESS		Jul-20		
	E.4	Establish grant program for Knox Box installation	FA	CAL FIRE, OES, DPC, SO, County Counsel, AIS, SDG&E	IN PROGRESS		Oct-20		

RESILIENCE REVIEW TASK TRACKER 1-19 (WILDFIRES)

REPORT #: WILDFIRE 1-19
MISSION AREA: RESPONSE
DATE: 9-9-2019

TOTAL TASKS: 19

		COMPLETED	0	0%
		IN PROGRESS	19	100%
		NOT STARTED	0	0%

OBJECTIVE	#	TASK	LEAD	SUPPORT	STATUS	LAST UPDATE	EST COMP DATE	ACTIONS TAKEN	REMARKS
RESPONSE A	A.1	Update County Fire Strategic Plan and determine capability enhancements of fire protection resources	FA	CAL FIRE, SO	IN PROGRESS		Jul-20 (On-going)		
	A.2	Procure and install additional ground and aviation fire detection cameras	FA	CAL FIRE, DPC, SDG&E	IN PROGRESS		Aug-22		
	A.3	Support air tanker basing at Ramona Airport	FA	CAL FIRE, PDS, DPW, OSIA	IN PROGRESS		Aug-21		
RESPONSE B	B.1	Identify subdivisions without secondary egress routes	FA	CAL FIRE, SO, DPW, H&CD, Caltrans, EMS	IN PROGRESS		Jul-21		
	B.2	Establish large animal evacuation standard operating procedure	DAS	OES, FA, SO	IN PROGRESS		Dec-19		
	B.3	Establish Neighborhood Evacuation Team Program	OES	AIS, FA, SO	IN PROGRESS		Jul-20		
RESPONSE C	C.1	Assess County Emergency Operations Center and Recovery Operations Center Responder staffing levels	OES / PDS	All department with EOC and ROC responder requirements, DHR	IN PROGRESS		Jul-20		
	C.2	Update EOC staff training	OES	Cal OES	IN PROGRESS		Jul-20		
RESPONSE D	D.1	Implement and transition users to P25 Digital Mobile Radio System	SO	FA, OES, DPC	IN PROGRESS		Jun-20 (& on-going)		
	D.2	Procure additional radio repeaters and infrastructure to enhance VHF radio reception and transmission	FA	CAL FIRE, Cal OES, SO	IN PROGRESS		Jun-25 (& ongoing)		
	D.3	Coordinate operational communications improvements	SO	FA, CAL FIRE, OES, Select Jurisdictions	IN PROGRESS		Jun 22 (& on-going)		
	D.4	Assess investment in satellite communications to improve operational communications	SO	FA, OES, DPC	IN PROGRESS		Mar-20		
RESPONSE E	E.1	Improve County capability to more rapidly restore essential services	OES	FA, SO, DPW, PH, CAL OES, SDG&E, SDCWA, Caltrans, VOAD	IN PROGRESS		Jul-21		
	E.2	Equip all County fire stations with backup emergency power	FA	DGS	IN PROGRESS		Jul-21		
RESPONSE F	F.1	Implement State Alert and Early Warning Guidelines	OES	Cal OES	IN PROGRESS		Nov-19 (& on-going)		
	F.2	Develop general sources of assistance messaging templates	OES	CCO, PH, DEH, BHS, SO, APCD, DPW	IN PROGRESS		Dec-19		
	F.3	Redesign and improve SDCountyEmergency.com and ReadySanDiego.org websites	OES	CTO, CCO, Perspecta	IN PROGRESS		Oct-20		
RESPONSE G	G.1	Establish four Urban Search and Rescue Units	FA	CAL FIRE	IN PROGRESS		Sep-19		
	G.2	Establish Joint County Technical Rescue Team	FA	CALFIRE, Carlsbad FD, San Marcos FD, Escondido FD	IN PROGRESS		Jan-20		

RESILIENCE REVIEW TASK TRACKER 1-19 (WILDFIRES)

REPORT #: WILDFIRE 1-19

MISSION AREA: RECOVERY

DATE: 9-9-2019

		TOTAL TASKS		COMPLETED	0	0%
		7		IN PROGRESS	6	86%
				NOT STARTED	1	14%

OBJECTIVE	#	TASK	LEAD	SUPPORT	STATUS	LAST UPDATE	EST COMP DATE	ACTIONS TAKEN	REMARKS
RECOVERY A	A.1	Develop County Debris Management Framework	DPW	OES, DGS, DPC, DPR	IN PROGRESS		Jun-21		
RECOVERY A	A.2	Identify debris and bio-hazard destinations	DPW	DEH	IN PROGRESS		Aug-19		
RECOVERY B	B.1	Develop a framework for establishing short and long-term interim housing options and support programs for persons experiencing homelessness as a result of a major wildfire	HCD	DPR, OES, FG3	IN PROGRESS		Dec-20		
RECOVERY B	B.2	Improve speed and efficiency in providing emergency interim housing	DPR	HCD, OES, DPC, DGS, IS	IN PROGRESS		Jul-21		
RECOVERY C	C.1	Procure and employ the Live Well Mobile Office to enhance Local Assistance Centers health and social services capabilities	HHSA-EO	PHS, BHS, HCD, OMWA, OES	IN PROGRESS		Mar-20		
RECOVERY D	D.1	Develop Recovery Training and Exercise Program	OES	Select LUEG and HHSA Depts, FA, SO, VOAD	Not Started		Dec-21		
RECOVERY D	D.2	Develop Spontaneous Volunteer Program	OES	VOAD	IN PROGRESS		Jan-21		