COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

SURFACE WATER QUALITY

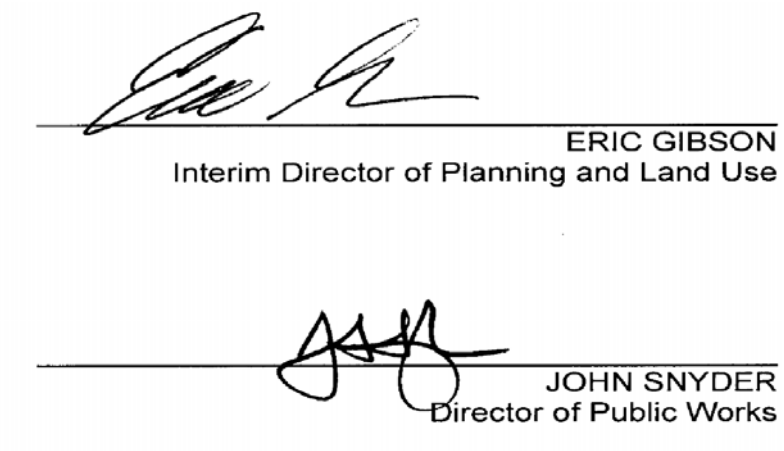
LAND USE AND ENVIRONMENT GROUP

Department of Public Works
Department of Planning and Land Use

July 30, 2007

APPROVAL

I hereby certify that these **Guidelines for Determining Significance for Surface Water Quality** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the 30th day of July, 2007.



ERIC GIBSON
Interim Director of Planning and Land Use

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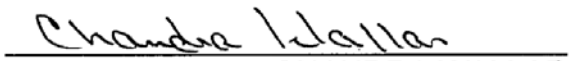
Director of Public Works

I hereby certify that these **Guidelines for Determining Significance for Surface Water Quality** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 30th day of July, 2007. The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance for Surface Water Quality except any revisions to the Guidelines for Determining Significance presented in Section 4.0 must be approved by the DCAO.

Approved, July 30, 2007



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EXPLANATION

These Guidelines for Determining Significance for Surface Water Quality and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), non-compliance with a particular standard stated in these Guidelines will mean the project will result in a significant effect, whereas compliance will normally mean the effect will be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> "The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The intent of these Guidelines is to provide a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and do not substitute for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Guidelines in the event of scientific discovery or alterations in factual data that may alter the common application of a Guideline.

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BMPs	Best Management Practices
CEQA	California Environmental Quality Act
CDHS	California Department of Health Services
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Groups
LID	Low Impact Development
NPDES	National Pollutant Discharge Elimination System
NRCS	USDA Natural Resources Conservation Service
RWQCB	Regional Water Quality Control Board
SSM	Stormwater Standards Manual
SUSMP	Standard Urban Stormwater Mitigation Plan
SWMP	Stormwater Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USEPA	U.S. Environmental Protection Agency
WPO	County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance

INTRODUCTION

This document provides guidance for evaluating adverse environmental effects that a proposed project may have on water quality. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, VIII. Hydrology and Water Quality:

Would the project:

a) Violate any water quality standards or waste discharge requirements?

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f) Otherwise substantially degrade water quality?

In addition to this document, water and pollution are also described in other guidelines for determining significance. Drainage facility capacity is also addressed in the "Guidelines for Determining Significance for Hydrology." Groundwater pollution is addressed in the "Guidelines for Determining Significance for Groundwater."

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

San Diego County's water resources consist of river systems, coastal lagoons, natural and constructed water bodies, and both shallow and deep groundwater bearing strata, from the Anza Borrego Desert to the Pacific Ocean. These water resources are not always apparent, given a primarily arid climate with defined wet and dry seasons that extends over most of the County. Nonetheless, Project Clean Water, initiated by the County Board of Supervisors in July 2000 outlines, "Clean water is essential for every aspect of life." Moreover, clean water supports continued economic growth and prosperity in the County. Responsible management of our water resources is required for a secure future.

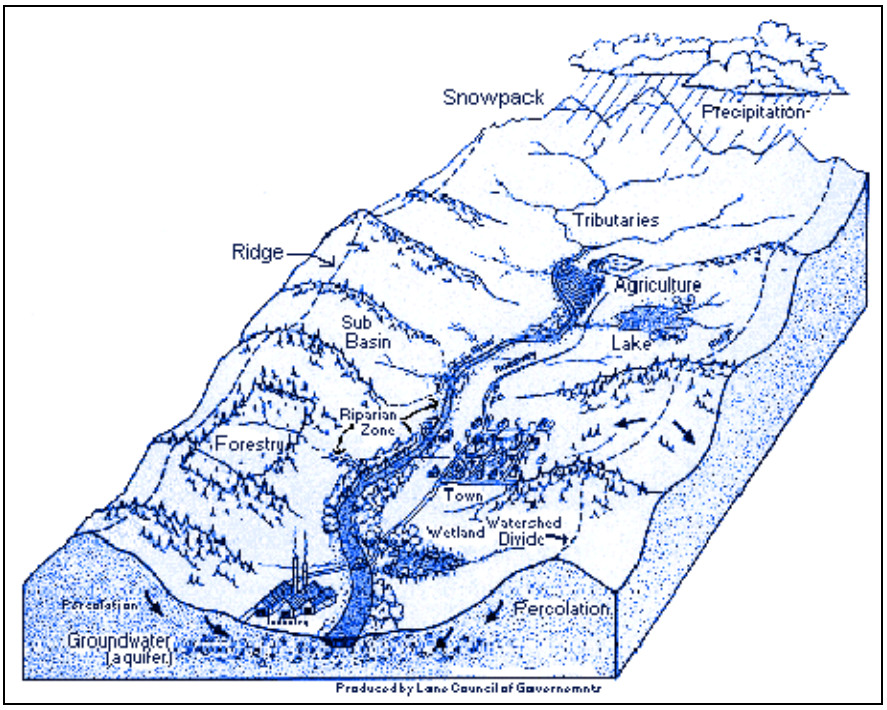
1.1 Basins and Hydrologic Regions

The Peninsular Mountain Range divides San Diego County between the South Coast Basin, which drains west toward the Pacific Ocean, and the Colorado River Basin, which drains east toward the Salton Sea and Colorado River. The South Coast Basin in San Diego County supports 11 major watersheds (hydrologic units) within the San Diego Hydrologic Region and is governed by the San Diego Regional Water Quality Control Board (San Diego RWQCB; Region 9). The Colorado River Basin supports portions of five watersheds in the Colorado River Hydrologic Region, governed by the Colorado RWQCB (Region 7).

1.2 Watersheds

A watershed is defined as an area of land that drains to a common receiving body or outlet. A watershed can be large (e.g. draining thousands of square miles to a major river, lake or ocean) or very small (e.g. 20-acre watershed that drains to a pond). The delineation of a watershed, or drainage area, depends on the scale of reference. Small watersheds may be combined into larger watersheds, and larger watersheds may be divided into sub-watersheds or hydrologic units, that drain to specific water bodies or features. Watershed boundaries follow the major ridgelines around drainages and meet where the water flows out of the watershed, usually the mouth of a stream or river (Figure 1).

Figure 1
Typical Watershed



The 11 watersheds in the San Diego Hydrologic Region[1] (Region 9) are:

- San Juan (901)
- Santa Margarita (902)
- San Luis Rey (903)
- Carlsbad (904)
- San Dieguito (905)
- Peñasquitos (906)
- San Diego River (907)
- Pueblo San Diego (908)
- Sweetwater (909)
- Otay (910)
- Tijuana (911)

[1] http://www.projectcleanwater.org/html/watersheds.html

San Diego County shares portions of the San Juan and Santa Margarita Watersheds with Orange and Riverside Counties, and the Tijuana Watershed with Mexico.

Portions of the five following watersheds are in the Colorado River Hydrologic Region[2] (Region 7) in the eastern part of the County:

- Anza-Borrego
- Clark
- Whitewater
- West Salton
- Imperial

Figure 2 shows the watersheds in San Diego County.

1.3 Surface Water

San Diego County's watersheds and geologic nature are characterized by its lagoons, lakes[3], reservoirs, rivers, and creeks. These water bodies capture the region's surface water runoff and become a blend of natural runoff and imported water. In addition to supporting natural habitat and supplying residents with potable water, these water bodies supply water for fire suppression and serve as popular recreation areas. Watersheds support lakes and reservoirs, which offer a variety of recreational activities, including fishing, boating, sailing, bike and horseback riding, and picnicking.

1.3.1 North County

The northern portion of the County has four of the 11 watersheds: San Juan (901), Santa Margarita (902), San Luis Rey (903) and Carlsbad (904). About 30 percent of the San Juan Watershed is located in San Diego County, primarily on Marine Corps Base Camp Pendleton and with the north-eastern corner located within the Cleveland National Forest. Major water bodies found within the San Juan Watershed in San Diego County are San Mateo Creek, San Onofre Creek, Las Flores Creek, and Lake Pulgas.

Approximately 27 percent of the Santa Margarita Watershed is located in San Diego County, with the rest in Riverside County. The west side of the watershed is on Camp Pendleton and the smaller northeast side is in the unincorporated County. Most of the major water bodies contributing to this watershed are in Riverside County, however, they all eventually reach Camp Pendleton in San Diego County, and discharge into the Pacific Ocean. Major water bodies within Santa Margarita Watershed in San Diego County include Lake O'Neil and the Santa Margarita River emptying into the Santa Margarita Lagoon (also known as the Santa Margarita Estuary) north of the City of Oceanside.

The San Luis Rey Watershed is the largest hydrologic unit in the San Diego region. The primary water bodies are Lake Henshaw and the San Luis Rey River, which

[2] http://www.swrcb.ca.gov/rwqcb7/region7.html

[3] A reservoir is a natural or artificial lake used for the storage and regulation of water. All of the lakes in San Diego County are actually reservoirs created by damming rivers.

discharges into the ocean near the City of Oceanside. Approximately 92.5 percent of the San Luis Rey River watershed is located in unincorporated areas of San Diego County. The rest is in the City of Oceanside and on Camp Pendleton.

About 31 percent of the Carlsbad Watershed is in unincorporated San Diego County. The Carlsbad Watershed includes four primary creeks and associated water bodies. They include Buena Vista Creek and Lagoon, Aqua Hedionda Creek and Lagoon, San Marcos Creek and Batiquitos Lagoon, and Lake Wohlford along Escondido Creek that empties into San Elijo Lagoon.

1.3.2 Central County

The central portion of the County contains three of the 11 watersheds: San Dieguito Watershed (905), Penasquitos Watershed (906) and the San Diego River Watershed (906).

In the San Dieguito Watershed the San Dieguito River connects Lake Sutherland and Lake Hodges, and discharges to the San Dieguito Lagoon near Del Mar. Most of the watershed (79.8 percent) is within the unincorporated County.

Major water bodies found within Penasquitos Watershed include the Los Penasquitos Lagoon, Carmel Valley Creek, Los Penasquitos Creek, Miramar Reservoir, Rose Canyon Creek, San Clemente Canyon and Mission Bay. All of the Penasquitos Watershed is within incorporated cities.

The San Diego River watershed is the second largest in San Diego County. The San Diego River Watershed includes Cuyamaca Reservoir connecting to the El Capitan Reservoir via Boulder Creek and the San Vicente Reservoir and Creek. Lake Jennings, Lake Murray and all three reservoirs drain to the San Diego River, which discharges directly to the Pacific Ocean through a man made channel. The eastern portion of the San Diego River Watershed is within unincorporated areas.

1.3.3 South County

The southern portion of the County has four of the 11 watersheds: Pueblo San Diego Watershed (908), Sweetwater Watershed (909), Otay Watershed (910), and Tijuana River Watershed (911). Three of these (Pueblo San Diego, Sweetwater and Otay) drain to the San Diego Bay and are commonly known as the San Diego Bay Watersheds. The Tijuana Watershed continues across the southern political boundaries of the United States and into Mexico.

The Pueblo San Diego Watershed is the smallest in San Diego County and almost completely (less 0.3 percent) within incorporated cities. The major water bodies are Chollas Creek and Paleta Creek.

Over 86 percent of the Sweetwater Watershed is within unincorporated jurisdictions and includes Palo Verde Lake, Loveland Reservoir, and Sweetwater Reservoir along the Sweetwater River.

Most of the Otay Watershed is within unincorporated areas and includes the Upper and Lower Otay Reservoirs and the Otay River.

Although only 27 percent of the Tijuana Watershed is within California, the Tijuana River discharges to the Tijuana Estuary and Pacific Ocean on the U.S. side of the international border. A portion of the watershed is within the unincorporated County. Major water bodies in the Tijuana River Watershed include Morena Lake, Barrett Lake, and the Tijuana River.

1.3.4 East County

Parts of five watersheds/hydrologic units are in the eastern desert portion of the County (Region 7). The Anza-Borrego Watershed is the largest, covering about 80 percent of the desert portion of San Diego County and extending into Imperial and Riverside Counties. Portions of the Clark, Whitewater, and West Salton Watersheds are at the extreme northeast corner of the County. The Imperial Watershed is at the southeast edge of San Diego County and extends into Imperial County. Water is limited in all of these areas. The surface water that intermittently exists flows toward the Salton Sea and the Colorado River.

1.4 Precipitation

Rainfall across San Diego County is variable, with most rain falling from November to April. Generally, the average rainfall is highest in the mountains and least along the coast and in the desert. Most of the county experiences light rainfall, although some of the central mountain areas receive more than 30 inches per year. The average seasonal precipitation along the coast is 10 inches or less. The amount increases with elevation as moist air is lifted and rain falls over the mountains. Some reporting points in the Cuyamaca and Volcan Mountains measure more than 35 inches per year, with areas on Mt. Palomar receiving up to 45 inches. Totals diminish rapidly with decreasing elevation on the eastern slopes of the mountains (rain shadow), with some desert stations reporting as low as 2.5 inches per season.

1.5 Evapotranspiration

Water is lost from a watershed by evapotranspiration, the transfer of moisture to the atmosphere from soil, water bodies, vegetation canopy (evaporation) and plants (transpiration). Types of vegetation and land use affect evapotranspiration rates, and therefore, the amount of water leaving a watershed. Factors that affect evapotranspiration include the plant type (root structure and depth), a plant's growth stage or maturity, soil cover, solar radiation, humidity, temperature, and wind.

1.6 Infiltration and Runoff

Infiltration of water through soil can reduce the amount of water that reaches stormwater management systems, filter pollutants and contaminants from the water, and recharge the watershed. The USDA Natural Resources Conservation Service (NRCS; formerly the Soil Conservation Service [SCS]), classifies a soil's infiltration characteristics into four Hydrologic Soil Groups (HSG):

> **Group A:** Low runoff potential. Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well-drained sands or gravels.
>
> **Group B:** Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well- to well-drained sandy loam soils with moderately fine to moderately coarse textures.
>
> **Group C:** Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of silty-loam soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture.
>
> **Group D:** High runoff potential. Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material.

Group A and B soils possess the greatest infiltration rates (unless soils are compacted during construction) and are generally best suited to stormwater infiltration. However, the San Diego Area has a relatively high concentration of Group C and D soils, which possess lower infiltration rates that either limit the use of infiltration-based stormwater management systems or require soil amendments to assist infiltration systems.

For a specific site, the HSG designation can be obtained by referring to a local soil survey, by consulting the complete national listing given in NRCS, or by performing an on-site investigation. Soil Survey maps can be obtained from local NRCS offices or on-line[4] for use in estimating soil type. The NRCS maps are also available at the County of San Diego, Department of Public Works. Consideration should be given to the effects of urbanization on the natural hydrologic soil group. If heavy equipment can be expected to compact the soil during construction or if grading will mix the surface and subsurface soils, appropriate changes should be made in the soil group selected (SD County Hydrology Manual 2003).

The table below presents soil infiltration rates for each soil group determined by laboratory studies and measurements. Site designers should compare the design runoff volume with the available soil storage volume to determine if infiltration is feasible, and then use the infiltration rates to determine if the design runoff volume can infiltrate within a reasonable time (generally 24 to 48 hours). For sites with Group C and

[4] http://websoilsurvey.nrcs.usda.gov/app/

D soils, retention- and detention based strategies are often more feasible than infiltration designs.

TABLE 1
TYPICAL SOIL INFILTRATION RATES.

Soil Type	Minimum Infiltration Rate (inches per hour)
A	0.30 to 0.45
B	0.15 to 0.30
C	0.05 to 0.15
D	0 to 0.05

In general, absorption of surface runoff by clay soils is low and reached quickly, whereas in sandy soils a larger portion of the runoff infiltrates the land surface and recharges the underlying groundwater system, resulting in less runoff.

1.7 Beneficial Uses of Water

Beneficial uses are defined as, "uses of water necessary for the survival or well being of people, plants and wildlife." In San Diego County, residents, visitors and nature rely on the region's water resources to provide beneficial uses such as ensuring a clean and available drinking water supply, supporting agricultural, commercial, industrial, recreational, residential, and military uses, and supporting wildlife and habitat. The State Water Resources Control Board (SWRCB) has adopted a uniform list and description of beneficial uses to be applied throughout all basins of the State (Attachment B). These uses of water serve to promote the tangible and intangible economic, social and environmental goals identified in the Water Quality Control Plan for the San Diego Basin (9) prepared by the RWQCB (www.swrcb.ca.gov/rwqcb9/programs/basinplan.html).

1.8 Stormwater Drainage Systems

Within urban areas stormwater and sewage systems run parallel but are not combined. A vast amount of the unincorporated San Diego County is rural land that does not support or require stormwater drainage facilities. In contrast, most urban areas within unincorporated San Diego County have a range of stormwater drainage facilities, all of which will continue to be improved as new discretionary projects are constructed.

Collectively, stormwater drainage facilities make up a stormwater conveyance system. A stormwater conveyance system as defined by the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance, "means private and public drainage facilities other than sanitary sewers within the unincorporated areas of San Diego County by which urban run-off may be conveyed to receiving waters, and includes but is not limited to roads, streets, constructed channels, aqueducts, storm drain, pipes, street gutters, inlets to storm drains or pipes, and catch basins."

2.0 EXISTING REGULATIONS AND STANDARDS

Several existing laws, regulations, policies and programs protect water resources in San Diego County.

2.1 Federal Regulations and Standards

National Environmental Policy Act [As amended, Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982, http://www4.law.cornell.edu/uscode/42/ch55.html.]
Federal agencies that implement the National Environmental Policy Act (NEPA) are required to consider potential water quality impacts when reviewing the environmental impacts of proposed federal projects.

Federal Water Pollution Control Act (Clean Water Act), 1972 [33 USC 1251-1376; Chapter 758; PL 845; 62 Stat. 1155 http://www.epa.gov/r5water/cwa.htm]
The principle federal law pertaining to the regulation of water quality is the 1972 Federal Water Pollution Control Act (Clean Water Act). The Clean Water Act strives to restore and maintain the chemical, physical, and biological integrity of the nation's water. The act sets up a system of water quality standards, discharge limitations, and permits. The fundamental purpose of this law is the protection of designated beneficial uses of water resources. Sections 106, 205(g), 205(j), 208, 303, and 305 of the Clean Water Act establish requirements for state water quality planning, management, and implementation with regard to surface waters. The Clean Water Act requires that states adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act.

The Clean Water Act was amended in 1987 to include urban and stormwater runoff, which required many cities to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater conveyance system discharges. Section 402(p) of the Clean Water Act prohibits discharges of pollutants contained in stormwater runoff, except in compliance with an NPDES permit.

2.2 State Regulations and Standards

California Environmental Quality Act [Public Resources Code 21000-21178; California Code of Regulations, Guidelines for Implementation of CEQA, Appendix G, Title 14, Chapter 3, §15000-15387 http://ceres.ca.gov/topic/env_law/ceqa/guidelines/]
Under the CEQA, lead regulatory agencies are required to consider potential impacts to water quality from proposed projects and disclose all potential impacts, proposed mitigation measures and design elements to other agencies and the public.

Porter-Cologne Water Quality Control Act, 1969 [California Water Code §13020, http://www.swrcb.ca.gov/water_laws/docs/portercologne.pdf]
California's Porter-Cologne Water Quality Control Act (1969), which became Division 7., Water Quality of the State Water Code, establishes the responsibilities and authorities of the nine Regional Water Quality Control Boards (previously called Water Pollution

Control Boards) and the State Water Resources Control Board (SWRCB). The Porter-Cologne Act names these Boards and designates them as "... the principal State agencies with primary responsibility for the coordination and control of water quality" (Section 13001). Each Regional Board is directed to "...formulate and adopt water quality control plans for all areas within the region." A water quality control plan for the waters of an area is defined as having three components: 1) beneficial uses which are to be protected, 2) water quality objectives which protect those uses, and 3) an implementation plan which accomplishes those objectives (Section 13050). In California, all surface waters and groundwater are considered to be "Waters of the State."

San Diego Municipal Storm Water Permit
[http://www.swrcb.ca.gov/rwqcb9/programs/stormwater/sd%20permit/Order%20No.%202001-01%20Final%20with%20attachmentss.pdf]
Per Federal regulations, the State issues a Municipal Stormwater permit from (also known as a National Pollutant Discharge Elimination System, or NPDES, permit) to municipalities and renew it every 5 years. Under this permit each municipality must develop a stormwater management program designed to control the discharge of pollutants into and from the municipal separate storm sewer systems (MS4) (or from being discharged directly into the MS4). The purpose is to protect local waterbodies since storm drains typically discharge their water into streams, bays, and/or the ocean without treatment. Order R9-2007-01 (NPDES No. CAS 0108758) was adopted by the RWQCB San Diego Region on January 24, 2007 and established waste discharge requirements for discharge of urban runoff from the MS4 of the County of San Diego, the 18 incorporated cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority.

2.3 Local Regulations and Standards

County of San Diego Watershed Protection, Stormwater Management and Discharge Control Ordinance (WPO) [San Diego County Code of Regulatory Ordinances Chapter 8 of Division 7 of Title 6. http://www.sdcounty.ca.gov/awm/docs/watershed-ordinance.pdf]
The current WPO and the Stormwater Standards Manual were adopted in August 2003. The stated purposes of these ordinances are to protect the health, safety and general welfare of the County of San Diego residents; to protect water resources and to improve water quality; to cause the use of management practices by the County and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the state; to secure benefits from the use of stormwater as a resource; and to ensure the County is compliant with applicable state and federal law. The WPO contains discharge prohibitions, and requirements that vary depending on type of land use activity and location in the County. The SSM is Appendix A of the WPO and sets out in more detail, by project category, what Dischargers must do to comply with the WPO and to receive permits for projects and activities that are subject to the WPO. The WPO and SSM define the requirements that are legally enforceable by the County in the unincorporated area of San Diego County.

In addition, the County has adopted its Standard Urban Stormwater Mitigation Plan (SUSMP) for Land Development and Public Improvement Projects. The SUSMP is focused on project design requirements and related post-construction requirements for land development and capital improvement projects, and addresses WPO requirements for these project types.

Order R9-2007-01 directs the County and other Copermittees to design and implement requirements of the Hydromodification Management Plan (HMP) and Low Impact Development (LID) Best Management Practices (BMP) to reduce stormwater runoff from project sites by promoting infiltration and minimizing impervious areas. The County WPO and SUSMP will be updated to fulfill the requirements of the new Order.

Water Quality Control Plans for the Colorado River and San Diego Basins
The basin plans were prepared by the Colorado RWQCB in accordance with the criteria in the California Port-Cologne Water Quality Control Act, and other pertinent state and federal rules and regulations. The two regional plans that set the standards for compliance are the:

- Colorado River Basin – Region 7, Water Quality Control Plan (http://www.waterboards.ca.gov/coloradoriver/documents/RB7Plan.pdf)
- San Diego Basin – Region 9, Water Quality Control Plan (http://www.waterboards.ca.gov/sandiego/programs/basinplan.html)

3.0 TYPICAL ADVERSE EFFECTS

Projects would have an adverse effect on water quality if discharges associated with a particular project would create pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code, or would violate regulatory standards, as defined in NPDES permits or Water Quality Control Plans for the receiving water body.

According to Section 13050 of the California Water Code “contamination" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected. "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: the waters for beneficial uses or facilities which serve these beneficial uses. Furthermore, "Pollution" may include "contamination." "Nuisance" means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal, and (3) Occurs during, or as a result of, the treatment or disposal of wastes.

The primary causes of pollution to be assessed under CEQA are:

- Grading or clearing of land so that soil material is discharged into a receiving water body, drainage channel, or stormwater conveyance system;
- Placing development in, or discharging material into, a river, stream, lake, wetland or water of the U.S., or into a buffer area for one of these water bodies; and
- Increasing impervious surface areas.

Two other causes, though not as common as those listed above, are:

- Discharging wastewater from an industrial or commercial process; and
- Storing equipment, raw materials, finished products, or waste products in a manner that exposes them to precipitation and/or stormwater runoff that is then discharged to a receiving water body, drainage channel, stormwater conveyance system, ground surface, or subsurface

3.1 Pollutants

Typical pollutants that can occur in runoff from residential, industrial, and commercial activities in urban areas include: sediment, nutrients (primarily phosphorous and nitrogen), heavy metals, organic compounds, trash and litter, oxygen demanding substances, oil and grease, pathogens (bacteria and viruses), pesticides and herbicides, fertilizers, animal waste (manure), thermal energy, and salts (Jeer et al. 1997).

3.1.1 Sediment

Increased sedimentation, over and above the amount that enters the water system by natural erosion, can cause many adverse impacts on aquatic organisms, water supply, and wetlands. Sedimentation can decrease transmission of light, which affects plant production and leads to loss of food and cover for aquatic organisms, changes behavioral activities (nesting, feeding, mating), and adversely affects respiration, digestion, and reproduction. Contaminants and toxic substances can be transported in sediments. Sediments can damage water treatment equipment, increasing treatment costs; reduce reservoir volume and flood storage; and increase peak discharges.

3.1.2 Nutrients (Phosphorous and Nitrogen)

Levels of phosphorous and nitrogen that are increased by urban development, gravel operations, agriculture, land disposal (sludge and septic systems), and illegal waste disposal can cause adverse effects, such as promoting algal blooms that may inhibit aquatic plant growth in wetlands, creating public health risks, causing odors and poor tasting water; and promoting eutrophication (nutrient accumulation) of lakes and rivers that can reduce dissolved oxygen levels through increased productivity and decay of organic matter. Eutrophication can alter habitat, increase nitrate concentrations above safe limits, and decrease aesthetic and recreation value of surface waters.

3.1.3 Metals

Metals in urban runoff and from mining, automobiles, land disposal, and natural deposition pollute local waters. Metals accumulate in sediments and in fish tissue, which poses risks to aquatic animals and animals up the food chain, such as lowering reproductive rates and life spans. Photosynthesis in aquatic plants can also be altered by metals in the water. Metals can form deposits in pipes, which reduces carrying capacity of the pipes; colors water and leaving stains on fixtures and clothing; and poses possible health hazards from toxic metals.

3.1.4 Pesticides and Herbicides

Pesticides and herbicides can enter surface water and groundwater via runoff from agriculture and urban areas, hydrologic and habitat modification, and lawn and golf course care. Typical impacts include accumulation of pesticides and herbicides in sediments; bioaccumulation of contaminants in the food chain; hinders photosynthesis in and may kill aquatic plants; causes odors in water supplies; and causes public health risks.

3.1.5 Thermal energy

Construction, mining and gravel operations, agriculture, urban runoff, and hydrologic and habitat modification can increase water temperatures, leading to impacts such as reducing vigor and growth of fish thereby reducing resistance to disease and reducing dissolved oxygen as water temperature rises, causing algae to grow and fish to die. In water intended for use by people, increased water temperature can accelerate pump and equipment corrosion; promote biological activity in water, which produces odors and poor taste; create a more favorable environment for pathogens, and may stimulate the growth of algae and aquatic plants, which reduces water clarity and aesthetic value.

3.1.6 Salts

Increased salts in regional fresh-water resources from mining, urban runoff, and construction can create stressful environments and even destroy habitat and food sources for wetland animals in aquatic and wetland habitats, as well as favoring salt-tolerant species; reduce the quality of drinking water; and may cause skin or eye irritations in people.

3.1.7 Pathogens (Bacteria & Viruses)

Runoff from agriculture, urban areas, land disposal, septic tanks (or illegal waste disposal) and sludge can contaminate surface water with pathogens such as bacteria and viruses, which can introduce diseases to humans and animals. Organisms harmful to aquatic life and the wetland food chain can be introduced, public health risks can be increased, and treatment costs for drinking water supplies can be increased. In

addition, swimming and surfing areas may have to be closed until pathogen contamination is abated.

3.2 Point and Nonpoint Sources of Stormwater Discharge

The chief cause of urban stormwater pollution is the discharge of inadequately treated waste or pollutants into the natural water system. Discharge is a volume of water that passes through a given point within a given period of time. It is an all-inclusive outflow term used to describe a variety of outflow (discharge) types. Discharge may occur naturally or as a result of human activities.

Over recent decades rapid growth and urbanization have placed increased pressure on water resources and resulted in local impacts to water quality, especially in the densely developed western part of the County. In general, increased urbanization increases the amount of pollutants generated by human activities within a watershed, and increases the amount of impervious surfaces, thus reducing the amount of water that would normally infiltrate into the soil and be filtered naturally. The typical result is more pollutants being carried directly into surface water by runoff. Controlling this pollution is critical to maintaining clean, safe water, to support a high quality of life and economic viability of the San Diego region.

3.2.1 Point Source Discharge

Stormwater discharges that enter the natural receiving waters can be polluted by either point sources or nonpoint sources. Point source pollution refers to pollutants discharged to water through any discernable, confined, and discrete conveyance. In other words, the boundaries of the source of pollution can be easily defined and identified from a single point. Point sources generally discharge predictable concentrations and volumes of pollutants. Examples of point source pollution are sewage treatment plants, landfills, and industrial facilities, all of which may release effluent and sewage or other liquid waste into a body of water.

3.2.2 Nonpoint Source Discharge

Nonpoint source pollution refers to diffuse, widespread cumulative sources of pollution and is the primary source of surface water and groundwater contamination. In other words, nonpoint source pollution can not be traced back to a single point or source. Rainwater and over-irrigation flowing over land that has been altered by human activity and washing pollutants that have accumulated on those land surfaces into storm drains, streams, rivers, and groundwater, and eventually into lakes, streams, or coastal embayments, cause nonpoint source pollution. These sources may be large or small, but are generally numerous throughout a watershed. Nonpoint sources cause water pollution from poor land use practices, which do not incorporate adequate “Best Management Practices” (BMP), and the collective effects of individual behavior. Nonpoint sources include but are not limited to runoff from urban, agricultural, or industrial areas, landscaping, roads, highways, construction sites, communities served

by septic systems, recreational boating activities, timber harvesting, mining, and livestock. Nonpoint source discharge can also result from physical changes to stream channels and habitat degradation. Nonpoint source contaminants include sediment, pesticides, petroleum-based hydrocarbons, metals, and pathogens. Nonpoint sources of pollution can occur year round any time rainfall, snowmelt, irrigation, or any other source of water runs over land or through the ground, picks up pollutants from these numerous, diffuse sources and deposits them into rivers, lakes, and coastal waters or introduces them into ground water.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

Determining the significance of water quality impacts can be very complex and must consider the physical and chemical nature of the hydrologic cycle; the various potential sources of water quality impairment; the many numbers of potential pollutants and their respective chemical and physical properties; the various uses of water resources; water quality monitoring data gaps; and, the extent of regulation by the various laws and ordinances. Therefore, a good understanding of the project description and the extent of regulation by various laws and ordinances is required prior to determining whether significant water quality impacts will result from a particular project.

The following significance guidelines should guide the evaluation of whether a significant impact to water quality will occur as a result of project implementation. A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on water quality, absent specific evidence of such an effect:

1. ***The project is a development project listed in County of San Diego, Code of Regulatory Ordinances (Regulatory Ordinances), Section 67.804(g), as amended and does not comply with the standards set forth in the County Stormwater Standards Manual, Regulatory Ordinances Section 67.813, as amended, or the Additional Requirements for Land Disturbance Activities set forth in Regulatory Ordinances, Section 67.***

This Significance Guideline was chosen to ensure compliance with applicable State and Federal law that protect surface water quality. The Stormwater Standards Manual is part of the Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) and sets out in more detail by project category, what dischargers must do to comply with the WPO, and in turn minimize impacts to surface water quality to a less than significant level. An impact of a project would be considered significant if the design conflicts with one or more of the applicable standards presented in the County Stormwater Standards Manual or the Additional Requirements for Land Disturbance Activities. The additional requirements include preparation of a Stormwater Management Plan that specifies the way the BMPs required by the WPO will be implemented, and provides minimum BMPs, for the land disturbing activity.

2. ***The project would drain to a tributary of an impaired water body listed on the Clean Water Act Section 303(d) list, and will contribute substantial additional pollutant(s) for which the receiving water body is already impaired.***

Under Section 303(d) of the 1972 Clean Water Act, States are required to develop a list of water quality limited segments. These waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. Several water body segments in San Diego County are on the list and any contribution of substantial additional pollutants may further impair the receiving water body. Examples of the types of pollutants/stressors that these water bodies are impaired for include sedimentation, total dissolved solids, bacteria indicators, fecal coliform, phosphorus, cadmium, copper, diazinon, etc. Any substantial contribution of pollutants to an impaired water body would raise the TMDL and would violate the Clean Water Act and such an impact would be considered significant.

3. ***The project would drain to a tributary of a drinking water reservoir and will contribute substantially more pollutant(s) than would normally runoff from the project site under natural conditions.***

This guideline was established to evaluate projects that could adversely affect local drinking water by increasing pollution above what would normally occur in runoff under natural conditions. A certain amount of pollution normally in runoff under natural conditions, but a project may not increase that amount and to do so would be considered a significant impact.

A drainage is tributary to a drinking water reservoir if it is upstream of the reservoir and urban runoff from that facility or activity enters (1) the stormwater conveyance system at a place and in a manner that will carry pollutants to the reservoir; (2) a flowing stream that will carry pollutants to the reservoir; or (3) an ephemeral stream that reaches the reservoir during storm events and that will carry pollutants to the reservoir during such storm events. The runoff from some drainages upstream of a drinking water reservoir may never reach the reservoir. In those cases the drainage would not be considered a tributary to the reservoir.

4. ***The project will contribute pollution in excess of that allowed by applicable State or local water quality objectives or will cause or contribute to the degradation of beneficial uses.***

This significance guideline has been developed based on State and local water quality objectives and beneficial uses. Water quality objectives are established for the reasonable protection of beneficial use and are derived from the RWQCB Basin Plans.

In this particular guideline, the receiving water does not have to be officially recognized as a 303(d) impaired water body. An impact to water quality will be considered significant if a project will exceed a water quality objective or will degrade a beneficial use as defined in the respective basin plan.

5. ***The project does not conform to applicable Federal, State or local "Clean Water" statutes or regulations including but not limited to the Federal Water Pollution Control Act, California Porter-Cologne Water Quality Control Act, and the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance.***

This significance guideline recognizes the three "Clean Water" regulations (one Federal, one State and one local) that establish water quality standards and waste discharge requirements to minimize impacts to water quality. Non-conformance with any of these regulations would degrade water quality and violate Federal, State and local laws. The impact would be considered significant.

5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

The standard mitigation and design factors for potential water quality impacts related to land development projects are meant to reduce potential pollutants from entering stormwater runoff, or to treat stormwater runoff prior to its leaving the project site.

5.1 Best Management Practices

Best Management Practices (BMPs) are typically considered to be standard mitigation/design considerations, and are usually required for ordinance compliance. For all projects that are subject to the WPO and/or NPDES General Permit Nos. CAS000001 and CAS000002, a Stormwater Management Plan (SWMP) must be developed which describes all the BMPs intended for the project. With land development projects, BMPs must address the land disturbance or construction phase, and the post-construction phase.

Lists of BMPs are extensive and those proposed to be used on a project must be chosen by analyzing the project description, determining potential pollutants from the project, evaluating the beneficial uses, water quality objectives, and listed impairments of receiving waters, evaluating the site physical characteristics and limitations, evaluating the economic feasibility of installing and maintaining BMPs, and complying with any specific regulatory requirements. Through the application of the WPO, County staff will ensure that proposed BMPs meet the environmental performance standards listed in Part G.3 of the County's Stormwater Standards Manual: Flow Control and Erosion Prevention; Water Quality Protection; and, Groundwater Quality Protection.

5.1.1 Construction Phase BMPs

Construction phase BMPs are meant to prevent erosion and transport of on-site soil materials to drainage courses where sedimentation could occur. These BMPs also address solid and sanitary waste management; concrete waste management; hazardous waste management; vehicle maintenance, washing and fueling; material use and storage, including spill prevention and control; and employee and subcontractor training at construction sites. A complete list of construction phase BMPs is provided in the SUSMP (www.sdcounty.ca.gov/dpw/watersheds/land_dev/susmp.html).

5.1.2 Post-construction Phase BMPs

Post-construction phase BMPs generally fall into three categories: Site Design, Source Control, and Treatment Control. These are the BMPs that a project will have as an inherent characteristic (in the case of Site Design) or continually maintain and operate (in the case of Source Control and Treatment Control) upon completion of project construction and during operation and/or occupancy of the project site. A complete list of post-construction phase BMPs is provided in the SUSMP, which can be viewed at http://www.sdcounty.ca.gov/dpw/watersheds/land_dev/susmp.html.

5.2 Low Impact Development (LID)

Low Impact Development (LID) is a storm water management approach that maintains the natural hydrologic character of the site or region by using design techniques that infiltrate (if soils are appropriate for infiltration), filter, store, evaporate, and detain runoff on site. LID design considerations for proposed private projects may include:

- Draining runoff from impervious areas into pervious areas based on the capacity to treat/hold runoff;
- Designing pervious areas to receive and treat runoff by using swales, detention, and/or bioretention, and using amended soils to increase infiltration;
- Using porous pavements where appropriate;
- Conserving natural areas, trees, vegetation, and soils;
- Constructing streets, sidewalks, and parking areas to the minimum widths necessary for public safety, thereby retaining pervious areas;
- Minimizing the impervious footprint of the project and disconnecting impervious surfaces;
- Minimizing soil compaction (under planned green/open areas); and
- Minimizing disturbance to natural drainages.

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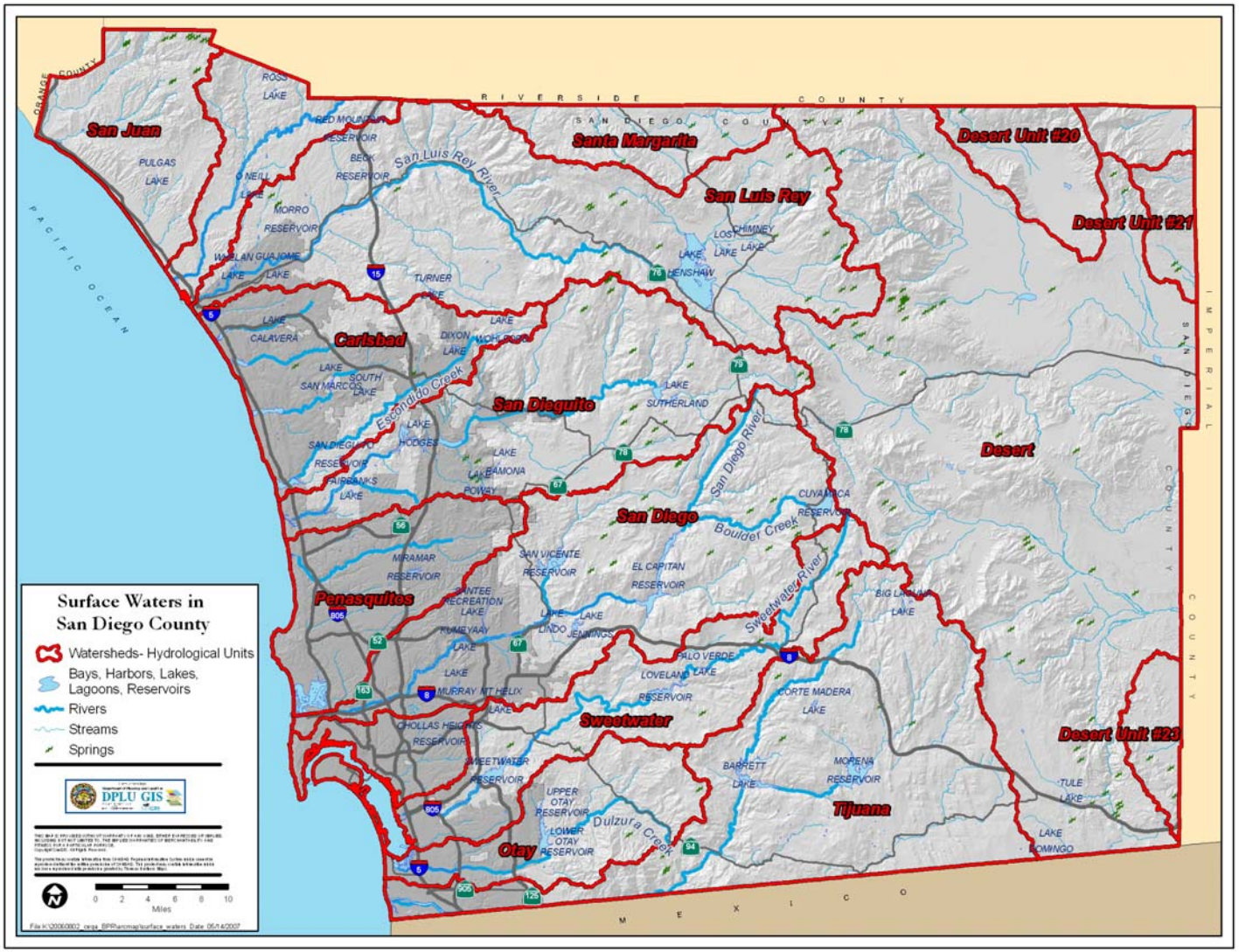
Figure 2
Watersheds in San Diego County



[ATTACHMENT A]

DEFINITIONS

Best Management Practice – A method, activity, maintenance, procedure, or other management practice for reducing the amount of pollution entering a water body. The term originated from the rules & regulations developed pursuant to the federal Clean Water Act (40 CFR 1 30).

Buffer – A zone created or sustained adjacent to a shoreline, wetland or stream where development is restricted or prohibited to minimize the negative effects of land development on animals and plants and their habitats.

Contamination – The impairment of water quality by waste to a degree that creates a hazard to public health through poisoning or through the spread of disease.

Detention – The temporary storage of storm runoff which is used to control discharge rates sufficiently to provide gravity settling of pollutants.

Erosion – The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road, building, or timber cutting.

Evapotranspiration – The loss of surface water into the atmosphere through plants and evaporation.

Excess stormwater runoff – Any increase in stormwater resulting from: an increase in the imperviousness of a site, including all additions to buildings, roads, and parking lots; changes in permeability caused by compaction during construction or modifications in contours, including the filling or drainage of small depression areas; the alteration of drainageways or regrading of slopes; the destruction of forest; or the installation of collection systems to intercept street flows or to replace swales or other drainageways.

Groundwater – Water stored underground that fills the spaces between soil particles or rock fractures. A zone underground with enough water to withdraw and use for drinking water or other purposes is called an aquifer.

Hydrology – The science of the behavior of water in the atmosphere (air), on the surface of the earth, and underground.

Impervious surface – Any surface which cannot be effectively (easily) penetrated by water. Examples include pavement, buildings, compacted soils, and rock outcrops.

Infiltration – The downward entry of water into the surface of the soil, as contrasted with percolation which is movement of water through soil layers.

Nonpoint source pollution – Pollution that enters water from dispersed and uncontrolled sources, such as rainfall or snowmelt, moving over and through the ground rather than from single, identifiable sources. A nonpoint source is any source of water pollution that does not meet the legal definition of point source in section 502(14) of the Clean Water Act (e.g., forest practices, agricultural practices, on site sewage disposal, automobiles, and recreational boats). While individual sources may seem insignificant, they may contribute pathogens, suspended solids, and toxicants that result in significant cumulative effects.

NPDES – National Pollutant Discharge Elimination System, a provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or another delegated agency.

Point source pollution – A source of pollutants from a single point of conveyance, such as a pipe. For example, the discharge from a sewage treatment plant or a factory is a point source.

Pollutants – A chemical or other additive that adversely alters the physical, chemical, or biological properties of the environment.

Receiving waters – Lakes, rivers, wetlands, and coastal waters that receive runoff.

Recharge area – A land area in which surface water infiltrates soil and reaches to the zone of saturation, such as where rainwater soaks through the earth to reach an aquifer.

Runoff – Water from rain, melted snow, or agricultural or landscape irrigation that flows over the land surface.

Sheetflow – A flow condition during a storm where the depth of stormwater runoff is very shallow and spread uniformly over the land surface. Sheet flow quickly changes into concentrated channel flow within several hundred feet.

Steep slope – area of a development site that is too steep to safely build on or has a high potential for severe soil erosion during construction.

Stormwater conveyance – A system of gutters, pipes, or ditches used to carry stormwater from surrounding land areas to constructed or natural drainage systems.

Stormwater runoff – Rain that flows off the surface of the land without entering the soil.

Surface water – Water on the surface of the land that has not infiltrated the soil. Includes streams, lakes, rivers, and ponds.

Vector – A carrier of contaminants.

Watershed – The geographic region within which water drains into a particular river, stream or body of water. A watershed includes hill, lowlands, and the body of water into which the land drains. Watershed boundaries are defined by the ridges separating watersheds.

Zoning – A set of regulations and requirements which govern the use, placement, spacing, and size of land and buildings within a specific area (zone).

[ATTACHMENT B]

STATE WATER RESOURCES CONTROL BOARD
LIST OF BENEFICIAL USES

- Municipal and Domestic Supply (MUN) - Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- Agricultural Supply (AGR) - Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- Industrial Process Supply (PROC) - Includes uses of water for industrial activities that depend primarily on water quality.
- Industrial Service Supply (IND) - Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
- Ground Water Recharge (GWR) - Includes uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
- Freshwater Replenishment (FRSH) - Includes uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).
- Navigation (NAV) - Includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
- Hydropower Generation (POW) - Includes uses of water for hydropower generation.
- Contact Water Recreation (REC-1) - Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.
- Non-contact Water Recreation (REC-2) - Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- Commercial and Sport Fishing (COMM) - Includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
- Aquaculture (AQUA) - Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
- Warm Freshwater Habitat (WARM) - Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

- Cold Freshwater Habitat (COLD) - Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
- Inland Saline Water Habitat (SAL) - Includes uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.
- Estuarine Habitat (EST) - Includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
- Marine Habitat (MAR) - Includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
- Wildlife Habitat (WILD) - Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- Preservation of Biological Habitats of Special Significance (BIOL) - Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.
- Rare, Threatened, or Endangered Species (RARE) - Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
- Migration of Aquatic Organisms (MIGR) - Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
- Spawning, Reproduction, and/or Early Development (SPWN) - Includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish.
- Shellfish Harvesting (SHELL) - Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes.