

COUNTY OF SAN DIEGO
GUIDELINES FOR DETERMINING SIGNIFICANCE
HYDROLOGY AND WATER QUALITY



LAND USE AND ENVIRONMENTAL GROUP
Department of Planning and Development Services
Department of Public Works

August 18, 2021

APPROVAL

I hereby certify that these **Guidelines for Determining Significance for Hydrology and 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 Development Services, in coordination with the Director of Public Works on the 19th day of August, 2021.



KATHLEEN FLANNERY

Acting Director of Planning and Development Services



JEFF MONEDA

Director of Public Works

I hereby certify that these **Guidelines for Determining Significance for Hydrology and 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 19th day of August, 2021. The Director of Planning and Development Services is authorized to approve revisions to these Guidelines for Determining Significance for Hydrology and Water Quality except any revisions to the Guidelines for Determining Significance presented in Sections 3.2 and 3.3 must be approved by the DCAO and the County Board of Supervisors.

Approved, August 19, 2021



SARAH AGHASSI

Deputy CAO

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LIST OF PREPARERS AND TECHNICAL REVIEWERS

County of San Diego

Bridget Lawrence, PDS, Primary Author
Jenna Roady, PDS, Primary Author
Regan Watt, PDS, Primary Author
Edwin Sinsay, PDS, Technical Reviewer
Greg Carlton, DPW, Technical Reviewer
Rene Vidales, DPW, Technical Reviewer
Sara Agahi, DPW, Technical Reviewer
Sean McLean, PDS, Technical Reviewer
Sheri McPherson, DPW, Technical Reviewer

Technical Peer Review Panel

Bryan Hill, Stevens Cresto Engineering, Inc.
Boushra Salem, City of Chula Vista
Christopher Bauer, City of Chula Vista
Eric Mosolgo, City of San Diego
Eylon Shamir, Hydrologic Research Center
Jake Gusman, River Focus
Laura Henry, Rick Engineering Company
Leila Telebi, Michael Baker International
Mark Seits, HDR
Stephan Beck, Ninyo and Moore

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LIST OF ACRONYMS

BFE	Base Flood Elevation
BMP	Best Management Practices
CEQA	California Environmental Quality Act
CLOMR	Conditional Letter of Map Revision
CWA	County Water Authority
FDPO	County of San Diego Flood Damage Prevention Ordinance
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GI	Green Infrastructure
HSG	Hydrologic Soil Group
JRMP	Jurisdictional Runoff Management Plan
LOMR	Letter of Map Revision
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
PDP	Priority Development Project
RPO	County of San Diego Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SFHA	Special Flood Hazard Area
SSD-BMP	Significant Site Design Best Management Practices
SWPPP	Stormwater Pollution Prevention Plan
SWQMP	Stormwater Quality Management Plan
WPO	County of San Diego Watershed Protection Ordinance

Guidelines for Determining Significance: Hydrology and Water Quality

1.0 Introduction

1.1 PURPOSE

The California Environmental Quality Act (CEQA) requires public agencies to review the environmental impacts of proposed projects and consider measures to reduce significant adverse environmental effects when required. These Guidelines for Determining Significance for Hydrology and Water Quality (Guidelines) have been prepared to assist County of San Diego (County) staff, project applicants, and the public in the review of discretionary projects and environmental documents to determine whether, based on substantial evidence, a project may have a significant effect on the environment pursuant to CEQA. They are intended to be used in conjunction with commonly accepted professional standards, judgments, and practices, and should be updated when necessary in response to changes in CEQA, environmental circumstances, or standards for scientific analysis.

These Guidelines are not binding on any decision-maker and should not be substituted for the use of independent judgment to determine significance or the evaluation of evidence in the record. Pursuant to Section 15064(b)(2) of the CEQA Guidelines, compliance with a threshold does not relieve the lead agency of the obligation to consider substantial evidence that a project's environmental effects may be significant. The County reserves the right to modify these Guidelines in the event of scientific discovery or new or updated factual data that may alter the common application of a guideline.

1.2 GUIDELINES FOR DETERMINING SIGNIFICANCE

The purpose of the Guidelines is to clarify and standardize analysis in the environmental review process by providing a consistent, objective, and predictable evaluation of significant effects. Section 15064.7 of the CEQA Guidelines encourages public agencies to develop analytical tools which provide technical guidance in evaluating a project's environmental impact and determining whether any such effects may be considered significant.

This determination must be based on scientific and factual information and a consideration of the context of the project, and should include an analysis of direct, indirect, and cumulative effects of the project. 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 “less than significant.”

This document provides guidance for evaluating adverse environmental effects that a proposed project may create or incur relating to hydrology and water quality.

- **Section 2** outlines the hydrologic context of the County, definitions of hydrologic phenomena related to flooding, and relevant regulations which should be reviewed and incorporated in the environmental analysis of projects. This section also includes a map and other resources that should be consulted to aid in the identification of significant environmental impacts related to hydrology and water quality.
- **Section 3** includes questions listed in Appendix G of the CEQA Guidelines for Hydrology and Water Quality, a standard methodology for determining whether an environmental impact could be potentially significant.
- **Section 4** outlines mitigation measures which may be used to reduce a project’s environmental impacts to a level that is less than significant.

1.3 KEY TERMS AND DEFINITIONS

There are several key terms used throughout these Guidelines that are briefly defined below to provide proper context in how these Guidelines apply to projects. CEQA, in general terms, is concerned with new development projects—specifically, how they could affect the existing hydrologic environment (e.g., altering existing drainage patterns, generating new pollutants) and how these impacts can be avoided or minimized through the use of design features.

Erosion is the weathering away of land surface by natural or man-made activities. It occurs naturally from water or wind forces and can be intensified by increased runoff and land clearing practices related to farming, residential or industrial development, road construction, or timber cutting.

Flooding is a partial or complete inundation of normally dry land areas. Flooding is commonly associated with the flow over the banks of rivers, streams, or stormwater

channels. Flooding can also occur near stormwater conveyance or diversion facilities, or in low-lying areas not designed to carry water at any time.

A **floodplain** or flood-prone area is any land area adjacent to a watercourse susceptible to being inundated by water from any source (see definition of “flooding”). A floodplain consists of a floodway (main flow conveyance) and a flood fringe (flow conveyance or storage outside of the floodway to the outer edges of the inundation area). A floodplain is an integral part of the stream system. It provides conveyance and storage capacity for high flows, helps reduce the erosive power of the stream during a flood, and reduces the discharge of sediment during high flow periods. Developed areas in floodplains are susceptible to flooding that can result in significant property damage and potential for loss of life.

A **Floodway** is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height but not to exceed one foot. Also referred to as “Regulatory Floodway”.

Hydraulics is the study of water conveyance through pipes, channels, creeks and storm drains. Hydraulic studies are performed to determine water surface elevations and flow velocities during a flood or other design event, as well as the force of the moving water against the channel bed.

Hydrology is defined as the science dealing with the properties, distribution, and circulation of surface water, groundwater and atmospheric water. The quantity and rate of water which flows in a creek or river is dependent on climatic conditions combined with the watershed characteristics. The slope and shape of the watershed, soil properties, land cover, land use, recharge area, and relief features are watershed characteristics which influence the quantity of surface flows.

Hydromodification is changes in a watershed’s runoff characteristics resulting from development, together with associated morphological changes (increased erosion or sedimentation) to stream channels receiving the runoff. Hydromodification leads to habitat degradation due to loss of overhead cover and loss of instream habitat structures.

Impervious surfaces allow little or no water infiltration into the ground. These surfaces are commonly artificial and include compacted soils, pavements, roofs, or other structures. Natural impervious surfaces may include rock, outcrops, wetlands, and soils with very low infiltration rates.

A **National Pollutant Discharge Elimination System (NPDES)** is a provision of the Clean Water Act that prohibits discharge of pollutants into the waters of the United States unless a special permit is issued by the EPA, a state, or another delegated agency. A project would be required to obtain a NPDES permit if the project would discharge from a point source into the waters of the United States. Examples of this would include discharge from industrial sites, construction activities, or wastewater discharges.

A **Priority Development Project (PDP)**, as defined by the San Diego Municipal Stormwater Permit (Regional MS4 Permit) provision E.3.b, is a land development project that falls under the planning and building authority of the Copermittee for which the Copermittee must impose specific requirements in addition to those required of Standard Projects. Some common examples of a PDP are projects that would result in 10,000 square feet or more of impervious services, or projects that would disturb one or more acres of land. Additional thresholds are defined in the County of San Diego BMP Design Manual listed in Section 2.3 of this document.

Runoff is the draining away of water and the substances carried in it from the surface of an area of land, roadway, or from a building or other structure. As land is developed, impervious area is often increased, thereby increasing runoff. The increased volume and peak flow of runoff in a drainage area may have short-lived, but rather dramatic, impacts during storm events. Some effects could include property damage, water quality impacts and disturbance of wildlife habitat.

Soil infiltration refers to the downward entry of water into the soil and varies with soil type. Infiltration allows the soil to temporarily store water, making it available for uptake by plants and soil organisms and/or recharge groundwater basins.

A **watershed** is an area of land that drains all the streams and rainfall to a common outlet. A watershed may be only a few acres or hundreds of square miles as in rivers. All watersheds can be divided into smaller sub-watersheds.

Water quality is affected by several factors, including erosion, contaminants carried by runoff, and by direct discharge of pollutants. As land is developed, impervious surfaces can increase runoff that contains oils, heavy metals, pesticides and fertilizers from vegetated surfaces, bacteria and other contaminants into receiving waters such as creeks, bays, lagoons, or the ocean.

2.0 Environmental Setting

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. 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). Figure A shows the watersheds in San Diego County.

Hydrology and Flooding

The potential for flooding is high in many parts of unincorporated San Diego County. The climate is generally semi-arid (and to a lesser extent arid, such as in Borrego Springs) and the seasonal precipitation is highly variable in frequency, magnitude, and location. Infrequent large bursts of rain can rush down steep canyons and flood areas unexpectedly. Flooding in San Diego and the rest of southern California most frequently occurs during winter storm events between the months of November and April, and occasionally during the summer from convective monsoonal activity and infrequent tropical or remnant of tropical storms. National Weather Service records of flooding and heavy rainfall events demonstrate that just one to two inches of rain within a few days can cause localized flooding, while events that bring three or more inches of precipitation will induce more severe stages of flooding, including flash floods, mudflows and landslides. The occurrence of wildfires also contributes to the potential for increased runoff, flash floods, mudflows and debris flows throughout the County. The loss of vegetation may result in exposure and destabilization of the surface soil and an increase in runoff peak flow, increasing the potential for mudflows, and debris flows. Development in the County is regulated by two sets of floodplain maps: Flood Insurance Rate Maps (FIRMs) by the Federal Emergency Management Agency (FEMA) and County's local floodplain and floodway maps. When

making decisions about a proposed development, both the local and federal maps need to be consulted. To ensure safety, the most restrictive of the two will govern.

The conversion of undeveloped, natural areas to urbanized uses throughout San Diego's watersheds can contribute to downstream flooding by increasing the rate and amount of runoff in a watershed and altering drainage patterns. Any alteration to natural drainage patterns by modifying landforms that control the surface water can increase the potential for flooding. The capacity of a drainage structure can typically be adequately determined by a hydrology and drainage study; however, if drainage facilities are not adequately designed or built or properly maintained, the facilities can overflow or fail, resulting in flooding.

Water Quality

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 aquifers. 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) known as Groups A (sandy soils) through D (clay soils), each corresponding to approximate infiltration rates. San Diego 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. In general, Group D clay soils have lower infiltration rates and therefore larger portion of the rainfall is converted to runoff, whereas in Group A sandy soils, with higher infiltration rates, a larger portion of the rainfall infiltrates the land surface and recharges the underlying groundwater system, resulting in less runoff.

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 San Diego 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 infiltrated naturally. The typical result is more pollutants being carried directly into surface water by runoff. Implementation of stormwater treatment systems within the County varies significantly. A high percentage of 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 implemented a range of stormwater drainage facilities, as new discretionary projects are constructed.

Seiches and Tsunamis

Approximately 53 dams have been built in San Diego County for the purpose of water conservation and storage during the County's development and expansion. Typically, all land around the reservoirs' shorelines are in public holdings that restrict private land development and minimize risk of inundation from seiches (note: a seiche is potentially flood-causing standing wave in a lake, reservoir, or other body of water). Additionally, the historic record and the location of unincorporated lands away from the coastline indicate that no projects within the unincorporated County have probable potential to be inundated by a tsunami, and therefore no guideline for tsunami has been included in Section 4.

2.1 COMMON CONSTRAINTS

Development projects may be hindered by constraints warranting further analysis of the project design. Examples of common constraints in the County include onsite topographic features, such as steep slopes, and project locations near waterways. If not designed appropriately, potential project issues may result such as flooding, erosion, and pollutants entering a water course. The potential significance of these and other impacts should be evaluated during CEQA review. Refer to the Initial Study Research Packet to find more information about hydrology and water quality on a specific project. This can be found on our website within the popular services box: <https://www.sandiegocounty.gov/content/sdc/pds/advance/propertyconditionagreement.html>

2.2 REGULATIONS AND STANDARDS

An overview of federal, state, and local regulations is provided below, but this list is not exhaustive. All relevant regulations must be considered during the CEQA review process. Please refer to the General Plan Environmental Impact Report to ensure that all relevant regulations are addressed. In addition, regulations and standards continuously evolve. Federal, State, and local regulations should be checked prior to including in the document.

Federal Regulations and Standards

- Clean Water Act (CWA)
- Federal Emergency Management Agency (FEMA) regulations
- National Flood Insurance Act

State Regulations and Standards

- CEQA
- California Water Code
- Cobey-Alquist Flood Plain Management Act
- Porter-Cologne Water Quality Control Act

Local and Regional Regulations and Standards

- San Diego Basin Plan – Region 9, Water Quality Control Plan
- San Diego Municipal Stormwater Permit (Regional MS4 Permit)
- Colorado River Basin Plan – Region 7, Water Quality Control Plan
- County of San Diego Best Management Practices (BMP) Design Manual
- County of San Diego Watershed Protection Ordinance (WPO)
- County of San Diego Flood Damage Prevention Ordinance
- County of San Diego Grading Ordinance
- County of San Diego Jurisdictional Runoff Management Plan (JRMP)
- County of San Diego Resource Protection Ordinance (RPO)
- Board of Supervisors Policy I-73: Hillside Development Policy

2.3 Guidance Documents

Guidance documents are available to assist in the evaluation of significant effects related to hydrology and water quality. Various guidance documents have been developed specifically by the County to provide direction on the evaluation of potential project impacts and design considerations for projects within unincorporated San Diego County. These resources are provided below. They may also be found on the County's website:

[Best Management Practice Design Manual \(BMP\)](#)

[Clean Water Act 303\(d\) – List of Impaired Water Bodies](#)

[General Development Resources](#)

[Grading, Clearing, and Watercourses Ordinance \(Grading Ordinance\)](#)

[Hydraulic Design Manual](#)

[Hydrology Manual](#)

[Hydromodification Management Documents](#)

[Process Guidance & Regulations/Statutes](#)

[Resource Protection Ordinance \(RPO\)](#)

[Watershed Protection Ordinance](#)

2.4 Analysis and Project Design Features

Once project constraints and features have been identified, additional analysis and project design features may be required. The following analysis or design features may be incorporated into the project to mitigate or avoid environmental impacts related to hydrology or surface water quality. Also included are provisions that a project may be required to follow in order to analyze specific impacts. This discussion is not exhaustive, and other features and measures may be implemented on a project-specific basis.

A **Conditional Letter of Map Revision (CLOMR)** is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA).

An example of a project that may require a CLOMR is a residential development, or tentative map, that is proposed within a County or FEMA-mapped floodway and/or floodplain. The project would first submit the CLOMR to the County. Once the CLOMR is reviewed and accepted by the County, it is separately submitted to FEMA and provided to the County prior to recordation of the final map or permitting of any grading and/or improvement plan, whichever comes first.

A **Letter of Map Revision (LOMR)** is FEMA's modification to an effective FIRM. Letters of Map Revisions are often based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA.

For any project that requires a CLOMR, a LOMR would also be required to be submitted to FEMA within six months of project completion after review and approval from the County. The project would separately apply for a LOMR to FEMA and once approved, provide to the County prior to record plan approval of grading and/or improvement plans.

Green Infrastructure (GI), also known as Low Impact Development, is a stormwater management approach that attempts to maintain the natural hydrologic character of the site

or region by using design techniques that infiltrate, filter, store, evaporate, and detain runoff onsite.

Examples of GI are infiltration basins, bioretention, biofiltration, green roofs, tree wells, cisterns, dispersion areas, and permeable pavement. Additional examples are included in the County of San Diego BMP Design Manual listed in Section 2.3 of this document.

3.0 Determination of Significance

When a project is evaluated under CEQA, its design features are also considered as part of the project. Project design features are components of the project which are adopted prior to the public review period, whereas mitigation measures are added after an impact has been identified in order to reduce identified impacts of the project. As such, project design features must be considered as part of the project when determining impact significance. Common project design features relevant to hydrology and water quality impacts are summarized below, but additional measures may be appropriate. Design features are implemented on a project-specific basis and are tailored to a particular environmental context.

Standard design methods for construction and development are required as applicable for projects within SFHAs to reduce or avoid the effects of flooding and are identified in the County of San Diego Flood Damage Prevention Ordinance (FDPO), the RPO, the County Hydraulic Design Manual, and the County Hydrology Manual. Standard design methods address engineering analysis, materials and structural requirements, and other issues. Additionally, BMP requirements to reduce or avoid impacts to water quality are outlined in the WPO, the Grading Ordinance and the County of San Diego BMP Design Manual.

3.1 DISCRETIONARY PERMIT PROCESSING OPTIONS

Project applicants have the option to conduct a final engineering level hydrology analysis for projects located in a FEMA floodplain and/or a final engineering level analysis for stormwater after completion of the discretionary permit process. The discretionary permit processing options are discussed below.

Projects Located in Floodplains

For projects that affect FEMA or County floodplains, a project applicant has the option to secure entitlements and defer review by the Department of Public Works – Flood Control (DPW – Flood Control) through two options:

- **Option 1:** Applicant provides engineering computer modeling detailed analyses acceptable to DPW-Flood Control concurrent with the PDS CEQA review/determination. A FEMA-approved CLOMR is required before a grading permit is issued. If applicant starts detailed analyses as part of the CEQA review but then later decides they would like to switch to Option 2 prior to the final CEQA document, the applicant may revert to Option 2.
- **Option 2:** Applicant provides CEQA hydrology submittal pursuant to County of San Diego Guidelines for Determining Significance or CEQA Guidelines Appendix G. Staff performs CEQA hydrology review/determination. As a condition of approval for the discretionary application, the applicant will be required to provide detailed analyses acceptable to DPW-Flood Control and a FEMA-approved CLOMR prior to recordation of final map or permitting of any grading and/or improvement plan, whichever comes first.

Stormwater Analysis

During discretionary processing, project applicants have the option to conduct a final engineering level analysis for stormwater in conjunction or after completion of the discretionary permit process:

- **Option 1:** Applicant provides final engineering level analysis for stormwater in compliance with the San Diego RWQCB standards during discretionary permit process. The applicant completes the Stormwater Quality Management Plan (SWQMP) Intake Form for all Permit Application and either a Standard SWQMP or a PDP SWQMP, depending on the proposed project location, size and impervious surfaces. The SWQMP must include detailed project information acceptable to Planning and Development Services. A drainage or hydromodification study may also be required.
- **Option 2:** Applicant provides a preliminary stormwater analysis, demonstrating project feasibility, by using the tools which integrate factors contained in the County of San Diego BMP Design Manual to address CEQA requirements during discretionary

permit process. Currently, these options include the BMP Sizing Calculator for Structural BMPs, and the Significant Site Design BMP (SSD-BMP) Tool for dispersion areas and tree wells. These tools may change or could be replaced, so the applicant will have to consult with the County, and/or the documents in Section 2.3, to verify available tools at the time of submittal. During the final engineering process, the applicant will provide a refined level of stormwater analysis as required prior to approval of any grading/improvement plans as conditions of approval to ensure that projects comply with State mandates for stormwater runoff treatment and implementation of best management practices (BMPs) as required under the Regional MS4 Permit. Please see the County of San Diego BMP Design Manual for further information on this option.

The potential benefit of processing final design during the discretionary permit review process is that it provides greater certainty that the proposed design will meet all final requirements, including FEMA and the San Diego RWQCB requirements. If the applicant chooses to pursue Option 2 for either floodplains or stormwater, the applicant takes the risk of required project changes as a result of final engineering level analysis. If the changes are not within substantial conformance under the County Grading Ordinance, the applicant will be required to seek approval of the changes through a subsequent discretionary permit review process subject to CEQA.

3.2 INITIAL STUDY CHECKLIST QUESTIONS

This section addresses the following questions listed in the CEQA Guidelines, Appendix G, X. Hydrology and Water Quality as the basis for determining the significance of potential impacts to Hydrology and Water Quality.

Impacts to groundwater are not included in this document; these are outlined in a separate document entitled County of San Diego's Guidelines for Determining Significance: Groundwater.

Would the project:

- a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality?

- b) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
 - i. result in substantial erosion or siltation on- or off-site;
 - ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - iii. 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; or
 - iv. Impede or redirect flood flows
- c) In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- d) Conflict with or obstruct implementation of a water quality control plan?

This document also addresses the following question listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, VII. Geology and Soils:

Would the project:

- e) Result in substantial soil erosion or the loss of topsoil.

Guidance for evaluating these potentially significant effects are provided below in Section 3.3, Methodology. As described in Section 2.0, no projects within the existing unincorporated County are likely to be inundated by a tsunami or seiche. Therefore, no guideline for tsunamis or seiches has been included.

3.3 METHODOLOGY

The following guidelines and methodology should guide the evaluation of whether a significant impact to hydrology or 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.

a) Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality?

A project may have a significant impact to water quality if it would conflict with any of the regulations and standards listed in Section 2.2. Locally, the San Diego RWQCB adopted the Regional MS4 Permit NPDES that covered the San Diego County Co-permittees. Through this permit, the County was mandated to develop new and updated Runoff Management Plans and Programs, including Water Quality Improvement Plans and a Jurisdictional Management Program. Within the County, permit requirements are generally implemented under authority of the WPO. In addition, the County of San Diego BMP Design Manual provides guidance for land development and public improvement projects to comply with the Regional MS4 Permit.

Project-specific plans are required to be prepared in accordance with the Regional MS4 Permit, WPO and the County of San Diego BMP Design Manual. A Stormwater Pollution Prevention Plan (SWPPP) must be prepared and implemented for construction sites with disturbed areas greater than 1 acre. In addition, all projects must complete a Stormwater Intake Form to determine if the SWQMP required to be prepared for the project is a Standard SWQMP or a PDP SWQMP.

If a project would not conform to the SWPPP or the Standard SWQMP/PDP SWQMP, the project may result in a significant impact to water quality requirements or waste discharge requirements, and mitigation would be required.

b) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site;

This guideline requires the conformance of the project to design standards in the County's Hydraulic Design Manual and the County of San Diego BMP Design Manual. Additionally, projects within the County are subject to the provisions of the RPO and project-specific plans are required to be prepared in accordance with the WPO and the County of San Diego BMP Design Manual.

The County of San Diego BMP Design Manual establishes standards for new development to minimize runoff and maximize infiltration. However, San Diego County 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. In areas where infiltration is not appropriate, other types of BMPs can be utilized. An example would be a biofiltration system using biofiltration soil media (a mix of planting soil, sand and compost) which are vegetated surface water systems that filter storm water and support plant growth while providing pollutant treatment. These facilities also utilize shallow depressions to provide storage and evapotranspiration. Additional information is provided in the BMP Design Manual and the Regional MS4 Permit.

The County of San Diego BMP Design Manual contains mandatory measures as well as voluntary measures that development projects may take to address pollutant control and hydromodification management, and therefore reduce the level of significance of effects related to on- or off-site erosion and siltation.

The County also maintains the Grading Ordinance. Projects within the County are subject to the provisions of the Grading Ordinance to protect development sites against erosion and instability. Projects found to be inconsistent with the provisions of the Grading Ordinance would be generally considered to have a significant effect, absent specific evidence to the contrary.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Development proposed within the County should be designed to minimize the use of impervious surfaces and incorporate GI practices, in combination with site design, source control, and stormwater best management practices consistent with the County of San Diego BMP Design Manual.

A project may have a significant impact related to increase in surface runoff and on- and off-site flooding if it would conflict with any of the regulations and standards listed in Section 2.2. Project-specific plans should be designed to comply with the provisions of the FDPO, as well as the WPO and the Grading Ordinance to reduce on- and off-site flooding and flood losses as well as limiting impact to established watercourses. Additionally, projects should be sited to comply with the RPO to limit development in floodplains and floodways, as well as within and adjacent to watercourses.

iii. 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;

A project which results in exceeding the capacity of the existing or planned stormwater drainage system would generally result in a potentially significant impact.

The County's Hydraulic Design Manual establishes design standards and procedures for stormwater drainage and flood management facilities. A hydrology study (pursuant to the County's Hydrology Manual) will typically be required to determine the pre- and post-construction peak runoff flow rates and velocities exiting the project site, as well as the capacity of existing drainage facilities and any potential downstream impacts. Stormwater drainage facilities are designed to reduce the potential for flooding by collecting stormwater runoff and directing flows to the natural drainage course and/or away from urban development. If drainage facilities are not adequately designed, built, or properly maintained, the capacity of the existing facilities can be exceeded resulting in flooding and increased sources of polluted runoff. Any proposed projects which exceeds the capacity of the existing or planned stormwater drainage system and/or cause downstream flooding to occur, would generally result in a potentially significant impact.

A project which results in substantial additional sources of polluted runoff would generally result in a potentially significant impact. As mentioned above in this Section, question a), the San Diego RWQCB adopted a Regional MS4 Permit NPDES that covered the San Diego County Co-permittees. Through this permit, the County was mandated to develop new and updated Runoff Management Plans and Programs, including Water Quality Improvement Plans and a Jurisdictional Management Program. All projects in the County must complete a Stormwater Intake Form to determine if the SWQMP required to be prepared for the projects is a Standard SWQMP or a PDP SWQMP.

iv. Impede or redirect flood flows

The County has adopted the FDPO under the authority of the State of California Code designed to prevent development in flood-prone or sensitive areas by imposing construction standards on what is allowed to be built in the floodplain.

FEMA's National Flood Insurance Program (NFIP) identifies areas within the 1 percent annual chance exceedance (100-year) floodplain, which are shown on FEMA's FIRMs for the County. Additionally, the County has developed its own flood maps that account for

additional areas of known risk. The Code of Federal Regulations require that the most restrictive map for a flood area governs.

Project-specific plans are required to be prepared consistent with the County Grading Ordinance, which requires the lowest floor of structures to be elevated to or above the level of the 100-year flood, the FDPO, which requires development to be elevated at least one foot above the base flood elevation, and the RPO, which prohibits development of permanent structures for human habitation in a floodway. Specifically, a project cannot increase the water surface elevation in a watercourse within a watershed equal or greater than 1 square mile, by 1 foot or more in height and in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River and Otay River, 2/10 of a foot or more in height. Projects which propose development within a floodplain may be found to be significant if they obstruct flow within the floodplain, or cannot meet the aforementioned criteria of the RPO, and mitigation may be required.

c) In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

A project may have a significant impact to hydrology and water quality if it would conflict with any of the regulations and standards listed in Section 2.2. As mentioned above in Section 3.2, land within the county is unlikely to experience inundation due to a tsunami or seiche, and therefore such impacts are not further discussed within this document.

Guidance related to flood hazards is further discussed above in Section 3.2, question c)(iv). Development projects have potential to release pollutants due to project inundation from flooding. A SWPPP must be prepared and implemented for construction sites greater than 1 acre. In addition, all project must complete a Stormwater Intake Form to determine if the SWQMP required to be prepared for the project is a Standard SWQMP or a PDP SWQMP.

If a project would not conform to the SWPPP or the Standard SWQMP/PDP SWQMP, the project may result in a significant impact to water quality requirements and mitigation would be required.

d) Conflict with or obstruct implementation of a water quality control plan?

A project may have a significant impact on water quality if it would conflict with any of the regulations and standards listed in Section 2.2. Pursuant to the Porter-Cologne Water Quality Control Act and the federal Clean Water Act, nine Regional Water Quality Control Boards are

responsible for the coordination and control of water quality, including the adoption of Water Quality Control Plans, for all areas within the region. The San Diego RWQCB is the board responsible for guiding and coordinating the management of water quality in the San Diego region. The Colorado River Basin – Region 7, and the San Diego Basin – Region 9 Water Quality Control Plans are the two regional plans applicable in the County which set the standards for compliance. The purpose of these plans is to designate beneficial uses of the Region's surface and ground waters, designate water quality objectives, and establish an implementation plan.

It is through the use of the SWPPP, Standard SWQMP/PDP SWQMP, as well as compliance with the WPO and County of San Diego BMP Design Manual, that the objectives of the Water Quality Control Plans are met. If a project would not conform to the SWPPP or the Standard SWQMP/PDP SWQMP, the project may result in a significant impact to the implementation of a Water Quality Control Plan, and mitigation would be required.

This document also addresses the following question listed in the CEQA Guidelines, Appendix G, VII. Geology and Soils:

e) Would the project result in substantial soil erosion or the loss of topsoil?

This guideline requires the conformance of the project to design standards in the County's Hydraulic Design Manual and the County of San Diego BMP Design Manual. Additionally, projects within the County are subject to the provisions of the RPO and project-specific plans are required to be prepared in accordance with the WPO.

The County of San Diego has developed the BMP Design Manual which establishes standards for new development to minimize runoff and maximize infiltration. The County of San Diego BMP Design Manual contains mandatory measures as well as voluntary measures that development projects may take to address runoff volume, pollutant control and hydromodification management, and therefore reduce the level of significance of effects related to on- or off-site erosion and loss of topsoil.

The County also maintains the Grading Ordinance. Projects within the County are subject to the provisions of the Grading Ordinance to protect development sites against erosion and instability. Projects found to be inconsistent with the provisions of the Grading Ordinance would be generally considered to have a significant effect, absent specific evidence to the contrary.

4.0 Mitigation and Design Features

If mitigation or project design factors are identified that could reduce a significant effect, those shall be incorporated into the project. While project design elements and/or mitigation shall be incorporated into a project, it may not always be possible to reduce the impact to below a level of significance. In general, if mitigation or project redesign does not reduce a significant impact to hydrology to below a level of significance, the impact will be considered significant and unavoidable.

Mitigation measures used in the planning and land use process to avoid or reduce impacts associated with flooding and surface water quality are typically identified in engineering studies and are specifically designed for the project being implemented.

Available measures include, but are not limited to, the following:

The level of significance of not complying with water quality standards and regulations, or discharge requirements or degradation of surface water quality may be reduced through the implementation of the following:

- Stormwater treatment systems (must be managed by a stormwater BMP maintenance company or community stormwater system regulated by the County or State)

The level of significance of impacts caused by the alteration of existing drainage patterns of an area may be reduced through the implementation of the following:

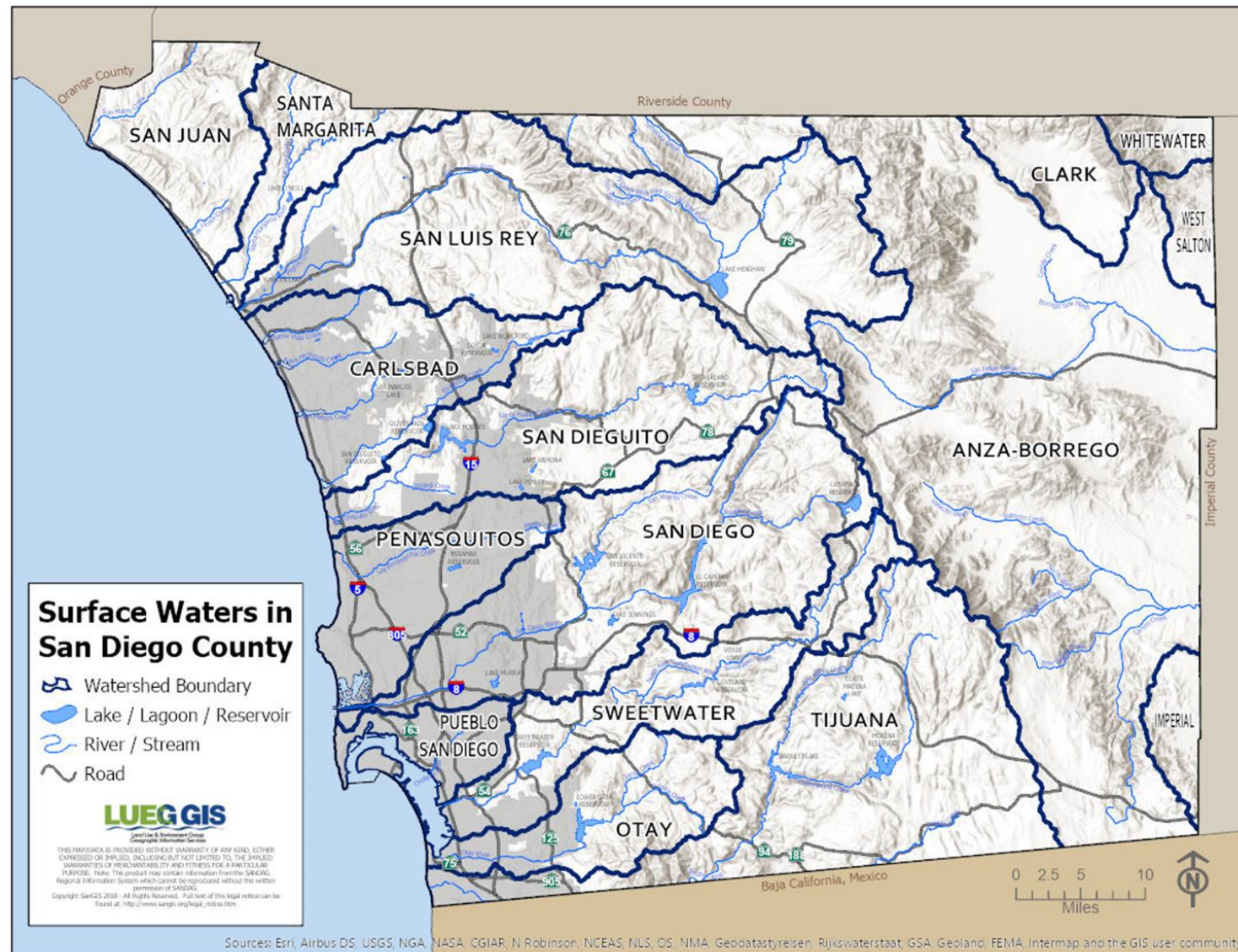
- Minimizing and restricting land development in floodplains, especially within the floodway
- Intentionally flooding low-lying areas to reduce the velocity and quantity of flow
- Reducing or preventing the generation of sediment and pollutants from new development
- Finish grading of a site at a site-specific slope (after construction and improvements are completed) to properly drain discharge away from foundations and slabs
- Limiting the height and slope of cuts and fills
- Properly compacting fills and keying them into bedrock

- Properly controlling flow of water onto slopes
- Constructing walls to divert mudflows
- Engineered channels, channel improvements, and other flood control facilities
- Providing additional flow control measures beyond the required low-flow threshold
- Stream restoration

Risk of releasing pollutants in a flood hazard, tsunami, or seiche zone level of significance may be reduced through the implementation of the following:

- Preserving natural riparian areas in floodplains and creating green belt buffers to absorb overflow, reduce runoff and filter pollutants.

5.0 Figure A



6.0 Additional Information

Hydrology reports must follow the guidelines in the County Hydrology Manual available at:

<https://www.sandiegocounty.gov/content/sdc/dpw/flood/hydrologymanual.html>

Standard SWQMP and PDP SWQMP reports must follow the templates in Appendix A of the County BMP Design Manual, available in the Development Resources page at:

<https://www.sandiegocounty.gov/stormwater>