

## 2.8 Hydrology and Water Quality

This section of the Supplemental Environmental Impact Report (SEIR) describes hydrology and water quality, including the existing groundwater resources, surface water resources, stormwater drainage systems, groundwater quality, surface water quality, and flooding and dam inundation areas within the Alpine Community Plan Area (CPA) and any changes to the physical environment that could occur as a result of implementation of the Alpine Community Plan Update (CPU).

This section incorporates information and analysis from the 2011 General Plan Environmental Impact Report (EIR) and 2016 Forest Conservation Initiative (FCI) General Plan Amendment (GPA) EIR (FCI EIR) (referred to throughout the rest of this section as “prior EIRs”) as they apply to the proposed project. Section 1.3, *Project Background*, of this SEIR provides a background for both EIRs. The 2011 General Plan EIR analyzed the entirety of the Alpine CPA with the exception of the FCI lands, which were subsequently analyzed under the FCI EIR. These prior EIRs both have similar significance statements related to hydrology and water quality.

Table 2.8-1 summarizes the impact conclusions identified in this section.

**Table 2.8-1. Hydrology and Water Quality Summary of Impacts**

<b>Issue Number</b>	<b>Issue Area</b>	<b>Prior EIRs Conclusion</b>	<b>Project Direct Impact(s)</b>	<b>Project Cumulative Impact(s)</b>	<b>Level of Significance After Mitigation</b>
HYD-1	Violate Water Quality Standards and Requirements	Significant and Unavoidable	Potentially Significant	Potentially Significant	Less Than Significant
HYD-2	Deplete Groundwater Supplies	Significant and Unavoidable	Potentially Significant	Potentially Significant	Significant and Unavoidable
HYD-3	Result in Erosion and Siltation	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
HYD-4	Flooding	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
HYD-5	Stormwater Systems	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
HYD-6	100-Yr Flood Hazard	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
HYD-7	Flood Flows	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
HYD-8	Dam Inundation and Flood Hazard	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant

<b>Issue Number</b>	<b>Issue Area</b>	<b>Prior EIRs Conclusion</b>	<b>Project Direct Impact(s)</b>	<b>Project Cumulative Impact(s)</b>	<b>Level of Significance After Mitigation</b>
HYD-9	Seiche, Tsunami, and Mudflow Hazards	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant

## 2.8.1 Existing Conditions

This section discusses the existing hydrology and water quality in the Alpine CPA. Impaired water bodies within the CPA are discussed in Table 2.8-2. The hydrology and water quality described in the prior EIRs are the same as the existing conditions evaluated in this SEIR.

### 2.8.1.1 Surface Water Hydrology

San Diego County's surface waters are characterized by estuaries, lagoons, bays, lakes, reservoirs, rivers, and creeks. These water bodies capture the flow of the region's surface water runoff and become a blend of natural runoff and imported water. Many support natural habitat and recreational areas in addition to acting as storage reservoirs for the County's water supply. Figures 2.8-3a and 2.8-3b show the location of surface waters including streams, rivers, lakes, and reservoirs within the Alpine CPA.

A watershed is an area of land that drains to a common waterway, such as a stream, lake, estuary, wetland, aquifer, or ocean. Watershed Management Areas (WMAs) are grouped according to hydrologic units (HUs) and have been developed to implement federal and state statutes for the management of water quality in the region. The northern portion of the Alpine CPA is within the San Diego River WMA and the southern portion is within the San Diego Bay WMA. These WMAs are described below.

The San Diego River WMA, which covers 277,543 acres, contains the San Diego River, Boulder Creek, El Capitan Reservoir, San Vicente Reservoir, Santee Lakes, Boulder Creek, and Lake Murray. Much of the impounded water in the reservoirs is used to serve population centers within the County, including the Alpine CPA. The watershed is drained by the San Diego River, which discharges into the Pacific Ocean between Mission Beach and Ocean Beach in the City of San Diego. Average annual precipitation ranges from 10.5 inches near the coast to nearly 35 inches in the eastern portion of the watershed. Approximately 74 percent of the San Diego River WMA is in the unincorporated County.

The southern portion of the Alpine CPA is within the San Diego Bay WMA, which covers 282,580 acres and consists of three major watersheds: Pueblo San Diego, Sweetwater, and Otay. The southern portion of the Alpine CPA falls within the Sweetwater Watershed of the San Diego Bay WMA, which encompasses over 148,000 acres. The Sweetwater Watershed includes one HU (Sweetwater) and three hydraulic areas: Lower Sweetwater, Middle Sweetwater, and Upper Sweetwater. The southern portion of the Alpine CPA is within the Upper Sweetwater hydraulic area. Major water bodies within the Sweetwater Watershed include the Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay. Rainfall in this watershed widely varies from 10.5 inches near the coast to approximately 35 inches in the far inland areas. Rainfall in Alpine ranges from approximately 17 inches to 24 inches, annually (County DPLU 2004).

### 2.8.1.2 Groundwater Hydrology

San Diego County overlies a complex groundwater resource that varies greatly throughout the region. Section 2.8.1.1 of the 2011 General Plan EIR includes a discussion of aquifer characteristics and is

incorporated by reference. The County has three general categories of aquifers: fractured rock aquifers, alluvial and sedimentary aquifers, and desert basin aquifers. The Alpine CPA contains fractured rock aquifers and alluvial and sediment aquifers but does not contain desert basin aquifers.

The majority of groundwater flow and storage within the Alpine CPA is in a fractured crystalline rock aquifer area. Fractured rock aquifers are present in the foothills and mountainous regions of the County, including the Alpine CPA, where precipitation is higher than in regions with lower elevations. Fractured rock aquifers typically have much less storage capacity than alluvial or sedimentary aquifers. Additionally, due to the low storage capacity, recharge to fractured rock aquifers can cause relatively fast rises to the water table, which conversely can have relatively fast declines to the water table from groundwater pumping in years without significant recharge.

An alluvial aquifer is located adjacent to Subarea 5 and Subarea 2, as shown on Figures 2.8-1a and 2.8-1b. Alluvial aquifers are characterized as structural depressions formed by folding and faulting and/or the effects of differential weathering of rocks often creating incised valleys. These depressions, which are typically bounded by relatively impermeable rocks, are subsequently filled by fine-grained alluvial sediments deposited by streams and rivers. Groundwater typically occurs within the pore spaces of these sediments.

Aquifers with limited groundwater in storage (e.g., fractured rock aquifers) and/or limited groundwater recharge (e.g., desert areas) may experience shortages from large groundwater users, such as water companies or districts, agriculture, or other large operations. Groundwater supply well yields within the Alpine CPA are shown in Figures 2.8-2a and 2.8-2b. Wells in a fractured rock aquifer typically yield relatively low volumes of water. Wells in an alluvial or sedimentary aquifer often yield higher volumes of water when compared with fractured rock aquifers. Within alluvial aquifers, coarse-grained sediments such as sand and gravel typically produce higher volumes of water than finer-grained sediments such as silts and clays. In coarse-grained sediments, well yields may be hundreds of gallons per minute and limited by inefficiencies in the well itself, rather than by limitations in the aquifer's ability to produce water.

Because production wells for residential and agricultural water uses are not metered or regulated for water quantity by the County, future localized groundwater problems are possible throughout the County from large quantity groundwater users. In addition, areas developed prior to implementation of the County's Groundwater Ordinance may have been developed at densities higher than would be currently allowed. This has resulted in the clustering of groundwater demand from relatively dense development, making these areas susceptible to localized groundwater problems.

Potable water in the Alpine CPA is provided by both water districts and groundwater from residential wells. The central-western portion of the Alpine CPA is within the San Diego County Water Authority (SDCWA) service boundary, while the remainder of the Alpine CPA is entirely dependent on groundwater. While the SDCWA does not directly provide water service to the Alpine CPA, it is a wholesale water supplier to water districts that serve the community. Padre Dam Municipal Water District, a member agency of the SDCWA, provides water service within the central-western portion of the Alpine CPA. Within the proposed project area, the Padre Dam Municipal Water District serves Subareas 1, 2, 3, 4, and 6, as well as a portion of Subareas 5 and 7. A majority of Subarea 5 is outside of the Padre Dam Municipal Water District and SDCWA service boundaries.

### **2.8.1.3 Water Quality**

#### **Groundwater Quality**

Historically, groundwater supplies within the County have produced high-quality drinking water. However, naturally occurring and anthropogenic sources of contamination have caused the quality of groundwater to be adversely affected in localized areas. The most common anthropogenic sources of groundwater contamination include leaking underground fuel tanks (LUFTs), sewer and septic systems, agricultural applications, and facilities producing animal wastes (ICF 2017). The most common contaminants in groundwater within the County include elevated nitrate, naturally occurring radionuclides, total dissolved solids (TDS), bacteria, and petroleum products. Other groundwater contaminants of concern, which may occur in localized areas, include herbicides, pesticides and other complex organics, and metals. Within the Alpine CPA, there are groundwater impacts associated with gasoline (i.e., benzene, methyl tertiary butyl ether [MTBE]), nitrate, and naturally occurring radionuclides. Groundwater contaminants are shown on Figures 2.8-4a and 2.8-4b.

#### **Surface Water Quality**

The following discussion identifies surface water quality issues facing the two WMAs within which the Alpine CPA is located. Major impacts on the San Diego River WMA include surface water quality degradation, habitat degradation and loss, sediment, invasive species, eutrophication, and flooding. Table 2.8-2 includes the water bodies within the Alpine CPA that are on the Clean Water Act (CWA) 303(d) list. Constituents resulting in water bodies being placed on the CWA 303(d) list include aluminum, bacterial indicators, cadmium, TDS, phosphorus, dissolved oxygen, manganese, nitrogen, and selenium (SWRCB 2019). Factors that may impair water quality in the WMA include urban runoff, agricultural runoff, sewage spills, and other natural sources.

The San Diego Bay WMA, which contains the Sweetwater River Watershed, includes water bodies included on the CWA 303(d) list (see Table 2.8-2). Pollutants of concern include trace metals, other toxic substances, coliform bacteria, pesticides, and nutrients. Sewer overflows, stormwater runoff, and habitat degradation are all factors that may impair water quality within the San Diego Bay WMA. In accordance with CWA Section 303(d), the Alpine CPA and the Watershed Management Areas were compared to the current published List of Impaired Water Bodies, which includes the surface waters that do not meet applicable water quality standards, required pursuant to Section 303(d) of the CWA.

The San Diego Basin Plan lists the San Diego River Watershed beneficial surface uses as municipal and domestic supply; agricultural supply; industrial process supply; industrial service supply; contact water recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; and wildlife spawning, reproduction, and/or early development. The San Diego Basin Plan lists the Sweetwater River Watershed beneficial surface uses as municipal and domestic supply; agricultural supply; industrial process supply; industrial service supply; contact water recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat, spawning, reproduction, and/or early development; and rare, threatened, or endangered habitat (SWRCB 2016).

**Table 2.8-2. Impaired Water Bodies within the Alpine CPA**

<b>Watersheds</b>	<b>Water Body Name</b>	<b>303(d) Impairments</b>
Upper San Diego River	El Capitan Reservoir	Not listed
	Alpine Creek	Indicator Bacteria
	Chocolate Creek	Indicator Bacteria, Nitrogen, Phosphorus
	King Creek	Not Listed
Lower San Diego River Watershed	Los Coches Creek	Indicator Bacteria, Nitrogen, Phosphorus, Selenium
	Lower San Diego River	Indicator Bacteria, Low Dissolved Oxygen, Benthic Community Effects, Cadmium, Nitrogen, Phosphorus, TDS, Toxicity
Upper Sweetwater River	Sweetwater River (Upper)	Aluminum, Benthic Community Effects, Indicator Bacteria, Selenium, Total Nitrogen
	Taylor Creek	Not Listed
	Palo Verde Lake	Not Listed
Lower Sweetwater River	Loveland Reservoir	Aluminum
	North Fork Sweetwater River	Indicator Bacteria, Manganese
Pine Valley Creek	Pine Valley Creek	Indicator Bacteria

Source: SWRCB 2019

Unfiltered and untreated stormwater can contain a number of pollutants that may eventually flow to surface waters. The chief cause of urban stormwater pollution is the discharge of inadequately treated waste or pollutants into the natural water system. 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 on 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 (paved) surfaces, thus reducing the amount of water that would normally infiltrate into the soil and be filtered naturally.

Pollutants, such as fertilizers and pesticides, motor oil, antifreeze, sediment, heavy metals, bacteria, and viruses, that accumulate on impervious surfaces are easily picked up by rainfall runoff and flow downstream via the stormwater conveyance system to surface waters. The stormwater conveyance system is not connected with the sanitary sewer system; therefore, urban runoff is not filtered to remove trash, cleaned, or otherwise treated before it is discharged to surface waters. The typical result is that pollutants are carried directly into surface water by runoff. Surface waters can be polluted by either point sources or non-point sources. A point source is a single, identifiable source of pollution, such as a pipe or drain. Non-point sources of pollution are often termed diffuse pollution and refer to those inputs and impacts that occur over a wide area and are not easily attributed to a single source.

### **2.8.1.4 Stormwater Drainage Systems**

A stormwater conveyance system, as defined by Title 6, Division 7, Chapter 8 of the County of San Diego's Code of Regulatory Ordinances relating to watershed protection, stormwater management, and discharge control (Ordinance 10410 [N.S.] Section 67.802[jj]), means "private and public drainage facilities other than sanitary sewers within the unincorporated County by which urban runoff may be conveyed to receiving waters, and includes, but is not limited to, roads, streets, constructed channels, aqueducts, storm drains, pipes, street gutters, inlets to storm drains or pipes, and catch basins." The stormwater conveyance system is designed to prevent flooding by transporting water away from developed areas. The Alpine CPA

has a range of stormwater drainage facilities, some of which include curb and gutter connected with underground storms drains and roadside ditches.

### ***2.8.1.5 Flooding and Dam Inundation***

Flooding is a general or temporary condition of partial or complete inundation of normally dry land areas. Flooding is commonly associated with the overflow of natural rivers or streams, but can also occur near stormwater facilities, dams, or in low-lying areas not designed to carry water. Flooding can be induced by precipitation or as a result of increased rates and amounts of runoff and altered drainage patterns. As shown in Figure 2.8-5a, a portion of Subarea 4 is located within a mapped County floodplain and adjacent to Subarea 2. As shown on Figures 2.8-5b and 2.8-6b, there are no mapped floodplains or floodways in Subarea 7. Federal Emergency Management Agency (FEMA) map floodplains, shown in Figure 2.8-7a and 7b, show a mapped floodplain adjacent to Subarea 2. As shown in Figure 2.8-6a, a portion of Subarea 4 is located within a mapped County floodway.

Flooding could also result from dam failure, seiches, or tsunamis. Dam inundation is flooding caused by the release of impounded water from structural failure or overtopping of a dam. Seiches or tsunamis can result from abrupt movements of large volumes of water due to earthquakes, landslides, volcanic eruptions, meteoric impacts, or onshore slope failure. None of the subareas within the Alpine CPA are within a County Dam Inundation Zone. However, other areas of Alpine CPA are subject to inundation associated with El Capitan Reservoir, Loveland Reservoir, and Palo Verde Lake.

A seiche is a standing wave in a completely or partially enclosed body of water. Areas along the shoreline of a lake or reservoir are susceptible to inundation by a seiche. High winds, seismic activity, or changes in atmospheric pressure are typical causes of seiches. The size of a seiche and the affected inundation area are dependent on different factors including size and depth of the water body; elevation; source; and, if human made, the structural condition of the body of water in which the seiche occurs.

Most enclosed water bodies are reservoirs built by local municipalities and water districts to provide water service to local residents and businesses. Typically, all lands around the reservoirs' shorelines are in public holdings, such as the City of San Diego, which restrict private land development and minimize risk of inundation from seiches. Moreover, the public land holdings are not within the jurisdiction of the unincorporated County. Enclosed bodies of water within the Alpine CPA include El Capitan Reservoir, Loveland Reservoir, and Palo Verde Lake. Loveland Reservoir is not located near the subareas where future development may occur. El Capitan Reservoir, northeast of Subarea 4, is owned by the City of San Diego. Palo Verde Lake is south of Subarea 5 but not within its inundation area.

## **2.8.2 Regulatory Framework**

Section 2.8.2 of the 2011 General Plan EIR and Section 2.7.2 of the FCI EIR included a discussion of regulatory framework related to hydrology and water quality in the unincorporated County, including the Alpine CPA. The regulations described in the prior EIRs are the same as the regulations evaluated in this SEIR, with the exception of the Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy), Sustainable Groundwater Management Act, State Water Resources Control Board (SWRCB) Construction General Permit, County of San Diego Jurisdictional Runoff Management Plan (JRMP) and the County's Best Management Practices Design Manual (BMP Manual) (County of San Diego 2019), which were not included in the prior EIRs. These more recent regulations are described below. All regulations used from the prior EIRs were reviewed during the drafting of this document to ensure they remain valid and are listed below.

Applicable federal regulations include:

- Clean Water Act (CWA) – Section 303
- National Flood Insurance Act
- National Flood Insurance Reform Act.

Applicable state regulations include:

- Porter-Cologne Water Quality Control Act
- Cobey-Alquist Floodplain Management Act of 1965
- National Pollution Discharge Elimination System (NPDES) Permits
- California Groundwater Rights
- California Water Code
- Assembly Bill 3030 – Groundwater Management Act.

Applicable state regulations not included in the prior EIRs or adopted after adoption of the 2011 General Plan and FCI GPA are described below.

### ***2.8.2.1 Sustainable Groundwater Management Act***

The Sustainable Groundwater Management Act, effective January 1, 2015, requires local public agencies in certain groundwater basins throughout the state to sustainably manage groundwater resources, and authorizes State Water Board intervention in areas where local agencies are unable or unwilling to do so. The long-term planning required by the act is designed to provide a buffer against drought and climate change and contribute to reliable water supplies regardless of weather patterns in the state. The Alpine CPA is located outside of a groundwater basin subject to the Sustainable Groundwater Management Act and is therefore not applicable to the Alpine CPU.

### ***2.8.2.2 SWRCB Construction General Permit (Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-006-DWQ)***

Construction activities that disturb 1 acre or more of land must obtain coverage under the SWRCB Construction General Permit (Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-006-DWQ). Under the terms of the permit, applicants must file complete and accurate Notice of Intent and Permit Registration Documents with the SWRCB. Applicants must also demonstrate conformance with applicable construction best management practices (BMPs) and prepare a construction Storm Water Pollution Prevention Plan (SWPPP) containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site.

Future development projects occurring within the project area would be required to comply with the Construction General Permit if over 1 acre of disturbance would occur during construction.

### ***2.8.2.3 Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems***

On June 19, 2012, the SWRCB adopted Resolution No. 2012-0032, the OWTS Policy, which establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from OWTS. In accordance with

California Water Code section 13290 et seq., the OWTS Policy sets standards for OWTS that are constructed or replaced, that are subject to a major repair, that pool or discharge waste to the surface of the ground, and that have affected, or will affect, groundwater or surface water to a degree that makes it unfit for drinking water or other uses, or cause a health or other public nuisance condition. The OWTS Policy also includes minimum operating requirements for OWTS that may include siting, construction, and performance requirements; requirements for OWTS near certain waters listed as impaired under Section 303(d) of the CWA; requirements authorizing local agency implementation of the requirements; corrective action requirements; minimum monitoring requirements; exemption criteria; requirements for determining when an existing OWTS is subject to major repair; and a conditional waiver of waste discharge requirements. The SWRCB approved the San Diego Regional Water Quality Control Board's (RWQCB) Nitrate/OWTS Policy Basin Plan amendment on November 17, 2015. The Office of Administrative Law approved the RWQCB's Nitrate/OWTS Policy Basin Plan amendment on May 17, 2016.

Applicable local regulations include:

- San Diego Basin Plan
- Colorado River Basin Plan
- County of San Diego Board of Supervisors (BOS) Policy I-45, Definition of Watercourses in the Subject of Flood Control
- County of San Diego BOS Policy I-68, Proposed Projects in Floodplains with Defined Floodways
- County of San Diego BOS Policy I-73, Hillside Development Policy
- County of San Diego Code of Regulatory Ordinances Section 91.1.105.10, Flood Damage Prevention Ordinance
- County of San Diego Code of Regulatory Ordinances Sections 86.601-86.608, Resource Protection Ordinance (RPO)
- County of San Diego Code of Regulatory Ordinances Sections 67.801-67.814, Watershed Protection, Stormwater Management and Discharge Control Ordinance (WPO) (For the convenience of the reader, a full description for this ordinance is provided below as it is referenced in the impact analysis section)
- County of San Diego Code of Regulatory Ordinances Sections 67.701-67.703, 67.710-67.711, 67.720-67.722, Groundwater Ordinance.

Applicable local regulations not included or adopted after adoption of the 2011 General Plan and FCI GPA are described below.

### ***2.8.2.4 County of San Diego Jurisdictional Runoff Management Plan***

The County's JRMP, approved on July 26, 2015, was prepared in response to regulatory requirements adopted by the RWQCB. The purpose of the JRMP document is to guide implementation of programs and strategies to reduce pollutants discharged from the County's storm drain system to receiving waters.

The goal of the JRMP is to establish a programmatic framework for the implementation of stormwater management activities in accordance with Water Quality Improvement Plan strategies and other jurisdictional plans, design standards, and ordinances. By providing and implementing programs for new



land development and redevelopment projects, impacts on receiving waters and other environmental resources are minimized. The JRMP also complies with federal and state laws.

### ***2.8.2.5 County of San Diego BMP Design Manual***

Updated in January 2019, the County's BMP Manual guides land development and public improvement projects in the unincorporated area to reach compliance with the Regional Municipal Separate Storm Sewer System (MS4) Permit and reduce the discharge of pollutants in stormwater to the maximum extent practicable. It is focused on project design requirements and related post-construction requirements and provides guidance on which stormwater management requirements apply to a given project; defines the performance standards for source control and site design BMPs, stormwater pollution control BMPs, and hydromodification management BMPs based on the Regional MS4 Permit; outlines the required steps to the comprehensive stormwater management design process; contains the source control and site design requirements applicable to all development; outlines the process of determining which category of on-site pollution control BMP or combination of BMPs is most appropriate for a given project and how those BMPs should be designed; provides guidance for meeting the performance standards for the two components of hydromodification management: protection of critical coarse sediment yield areas and flow control for post-project runoff; and describes the long-term maintenance requirements for structural BMPs.

The BMP Manual established the minimum BMP requirements applicable to all development projects, regardless of size or type. These measures include general BMP siting, source control BMPs, and site design BMPs. The County's 2013 MS4 Permit requires copermittees to impose additional requirements on those projects considered Priority Development Projects (PDPs), which are required to comply with structural BMP performance requirements specified in the BMP Manual. These additional requirements focus on retention of the 85th percentile storm event. If on-site retention is not feasible, other alternatives are available, including partial retention and biofiltration. PDPs are also required to comply with hydromodification management BMP requirements, as specified in the BMP Manual, which address flow duration impacts and critical sediment yield areas. All projects must meet the following general requirements:

- On-site BMPs must be located so as to remove pollutants from runoff prior to its discharge to any receiving waters, and as close to the source as possible;
- Structural BMPs must not be constructed within waters of the US; and
- On-site BMPs must be designed and implemented with measures to avoid the creation of nuisance or pollution associated with vectors (e.g., mosquitos, rodents, or flies).

All projects must complete a Storm Water Intake Form to determine if they are a development project and to assess their priority and project type. The Storm Water Intake Form determines which type of Stormwater Quality Management Plan (SWQMP) Form is required for each development project.

The MS4 Permit establishes separate performance standards for (1) source control and site design practices, (2) stormwater pollutant control BMPs, and (3) hydromodification management BMPs. Each development project must be designed to satisfy any of several potentially applicable performance standards. Performance standards are specific design objectives to be achieved through the implementation of BMPs.

Baseline Source Control and Site Design BMPs must be implemented for all development projects wherever it is applicable and feasible to do so. These BMPs help to prevent the on-site generation of

pollutants and flows and to keep them from leaving the site. The following source control BMPs must be implemented at all development projects where applicable and feasible:

- Prevention of illicit discharges into the MS4
- Storm drain system stenciling or signage
- Protection of outdoor material storage areas from rainfall, run-on, runoff, and wind dispersal;
- Protection of materials stored in outdoor work areas from rainfall, run-on, runoff, and wind dispersal
- Protection of trash storage areas from rainfall, run-on, runoff, and wind dispersal
- Use of any additional BMPs determined to be necessary by the County of San Diego to minimize pollutant generation at each project.

The following site design practices must be implemented at all Development Projects, where applicable and feasible:

- Maintenance or restoration of natural storage reservoirs and drainage corridors (including topographic depressions, areas of permeable soils, natural swales, and ephemeral and intermittent streams)
- Buffer zones for natural water bodies (where buffer zones are technically infeasible, require project applicant to include other buffers such as trees, access restrictions, etc.)
- Conservation of natural areas within the project footprint, including existing trees, other vegetation, and soils
- Construction of streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided public safety is not compromised
- Minimization of the impervious footprint of the project
- Minimization of soil compaction to landscaped areas
- Disconnection of impervious surfaces through distributed pervious areas
- Landscaped or other pervious areas designed and constructed to effectively receive and infiltrate, retain, and/or treat runoff from impervious areas, prior to discharging to the MS4
- Small collection strategies located at, or as close as possible to, the source (i.e., the point where stormwater initially meets the ground) to minimize the transport of runoff and pollutants to the MS4 and receiving waters
- Use of permeable materials for projects with low traffic areas and appropriate soil conditions;
- Landscaping with native or drought tolerant species
- Harvesting and using precipitation.

An Enhanced Site Design BMP is any site design BMP used specifically to reduce the Design Capture Volume (DCV) within a Drainage Management Area (DMA). This can be achieved either by adjusting the impervious runoff factor of one or more surfaces or by implementing BMPs that receive and mitigate a portion of the DCV. Because DCV reduction is not required, this performance standard is optional.

However, implementation of Enhanced Site Design BMPs is strongly encouraged for all PDPs as a means of reducing or eliminating the need for other, more complex or costly BMPs needed to satisfy Structural Performance Standards for the remaining DCV.

Structural Performance Standards are numeric design standards for reducing or eliminating stormwater flows and pollutant loads from PDP sites. They specifically address the remaining volume of runoff within a DMA (either the DCV or a greater volume) after the application of all other site design and source control BMPs described above. Storm Water Pollutant Control BMPs for PDPs must meet the following performance standards:

1. Each PDP shall implement BMPs designed to retain (i.e., intercept, store, infiltrate, evaporate, and evapotranspire) on site the pollutants contained in the volume of stormwater runoff produced from a 24-hour, 85th percentile storm event (DCV).
  - a. If it is not technically feasible to implement retention BMPs for the full DCV on site for a PDP, then the PDP shall utilize biofiltration BMPs for the remaining volume not reliably retained. Biofiltration BMPs must be designed as described in Appendix F of the BMP Manual to have an appropriate hydraulic loading rate to maximize stormwater retention and pollutant removal, as well as to prevent erosion, scour, and channeling within the BMP, and must be sized to:
    - i. Treat 1.5 times the DCV not reliably retained on site, or
    - ii. Treat the DCV not reliably retained on site with a flow-thru design that has a total volume, including pore spaces and pre-filter detention volume, sized to hold at least 0.75 times the portion of the DCV not reliably retained on site.
  - b. If biofiltration BMPs are not technically feasible, then the PDP shall utilize flow-thru treatment control BMPs (selected and designed per Appendix J.5 of the BMP Manual) to treat runoff leaving the site, and participate in offsite alternative compliance to mitigate for the pollutants from the DCV not reliably retained onsite pursuant to Section 2.2.1.(b). Flow-thru treatment control BMPs must be sized and designed to:
    - i. Remove pollutants from storm water to the MEP [Maximum Extent Practicable] (defined by the MS4 Permit) by following the guidance in Appendix J.5 of the BMP Manual; and filter or treat either: 1) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event, or 2) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two (both methods may be adjusted for the portion of the DCV retained on site as described in Appendix J.5 of the BMP Manual), and
    - ii. Meet the flow-thru treatment control BMP treatment performance standard described in Appendix J.5 of the BMP Manual.
2. A PDP may be allowed to participate in an offsite alternative compliance program in lieu of fully complying with the performance standards for storm water pollutant control BMPs on site.

For many PDP sites, additional BMPs may be needed to preserve the supply of critical coarse sediment to water bodies. Any PDP that is not exempt from hydromodification management requirements must either comply with critical coarse sediment requirements or demonstrate that they do not apply.

### ***2.8.2.6 County of San Diego Low Impact Development Handbook***

The County's Low Impact Development Handbook—Stormwater Management Strategies (County DPW 2014) was created in 2007 and updated in July 2014 by a multidisciplinary Technical Advisory Committee. The goal of the County Low Impact Development (LID) Program is to protect water quality by preserving and mimicking natural hydrologic functions through the use of stormwater planning and management techniques on a project site. The purpose of the LID Handbook is to provide a comprehensive list of LID planning and stormwater management techniques for developers, builders, contractors, planners, landscape architects, engineers, and government employees as guidance to reference before developing a project site. The document serves as a guidance document for the planning, application, design, and maintenance of LID BMPs. LID feasibility and applicability criteria and specific LID requirements are specified in the BMP Manual.

### ***2.8.2.7 County of San Diego Code of Regulatory Ordinances Sections 67.801–67.814, Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO)***

The current WPO was adopted in March 2008 and amended in January 2016. The stated purposes of this ordinance are to protect the health, safety, and general welfare of County residents; to protect water resources and 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 of San Diego 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 WPO defines the requirements legally enforceable by the County in its unincorporated areas.

In accordance with the WPO, the County requires the development of a SWQMP to be submitted with discretionary and ministerial permit applications. The purpose of the SWQMP is to mitigate stormwater impacts by identifying effective permanent BMPs for implementation. The SWQMP review process takes into account the project location, receiving water quality, anticipated project impacts and associated pollutants, and mitigation for impacts with the selection of BMPs. The SWQMP provides needed information to address both stormwater and non-stormwater issues. The Preliminary Grading Plan and Preliminary Hydrology/Drainage Study are an integral part of the SWQMP and provide the technical basis for the SWQMP. The SWQMP requires, but is not limited to, the following elements:

- Water quality pollutants of concern, treatment volume based on water quality design storm, site plans and adjacent land use, and soil characteristics;
- Mitigation measures to protect water quality, pollution prevention BMPs (MEP Based), site design BMPs, source control BMPs, LID BMPs, and structural treatment BMPs;
- Mitigation measures to prevent increases in downstream erosion to MEP, site design BMPs, source control BMPs, LID BMPs, and structural treatment BMPs;
- Any infiltration BMPs proposed for use on site; and
- Agreements, easements, licenses relating to proposed BMP construction, location, maintenance, or changes in drainage character.

As defined in the WPO, each proposed project is required to implement measures to ensure that (1) pollutant discharges and runoff flows from development are reduced to the maximum extent practicable, (2) receiving water quality objectives are not violated throughout the life of the project, and (3) runoff flows from development are managed to reduce erosive forces that may impact surface water beneficial use and/or habitat.

The WPO also contains LID requirements. LID is a stormwater management approach that maintains the natural hydrologic character of a site or region by using design techniques that infiltrate, filter, store, evaporate, and detain runoff on site. A LID Handbook was developed in December 2007 by the County of San Diego Department of Public Works (DPW) to provide the development community with guidance on implementing LID strategies and practices (County of San Diego DPW 2014). The WPO has incorporated LID site design BMP requirements in Section 67.806, *General Best Management Practice Requirements*, to be applicable to all development projects with the potential to add pollutants to stormwater or to affect the flow rate or velocity of stormwater runoff. This requirement defines the general standard for LID site design. The more explicit LID site design requirements for PDPs have been included in Section 67.810/67.811, *Additional Planning, Design and Post-Construction Requirements for Development Projects*. The BMP Manual includes a discussion of LID Site Design requirements.

All construction sites determined to be a land disturbance activity, as defined in the WPO, are required to meet *General BMP Requirements* (Attachment 2.2 of Section 67.806) and the *Additional BMP Requirements for Construction Projects* (Section 67.809). Section 67.806 (Attachment 2.2) of the WPO includes the list of general BMP requirements applicable to all dischargers. Section 67.809 (Attachment 2.2) of the WPO includes the list of additional BMPs to be implemented and maintained for construction projects. At a minimum, the County has determined that the following pollution control practices be adequately implemented and maintained year-round on all non-exempt projects:

- Project Planning
- Good Site Management “Housekeeping,” including waste management
- Non-stormwater Management
- Erosion Control
- Sediment Control
- Run-on and Run-off Control
- Active/Passive Sediment Treatment Systems, where applicable
- Any other construction BMPs suggested by the applicable Water Quality Improvement Plan and deemed to be effective at controlling erosion and sedimentation.

Disturbed soil areas are considered active whenever soil-disturbing activities have occurred, continue to occur, or will occur during the ensuing 14 days. Non-active areas must be protected within 14 days of cessation of soil-disturbing activities or prior to the onset of precipitation, whichever occurs first.

### **2.8.2.8 County of San Diego GPU Policies**

There are specific General Plan policies and goals found in the Safety Element, Conservation and Open Space Element, and Land Use Element intended to address hydrology and water quality. These policies are summarized below and included in Appendix C for reference.

## Safety Element

Goal S-8 is to reduce landslide, mudslide, and rock fall hazards. This is accomplished by policies S-8.1 and S-8.2 by directing development away from areas with high potential for these hazards. Goal S-9 is for the protection of life and property from flood events, and this is accomplished by policies S-9.1 through S-9.6 by managing and limiting development in floodplains and prohibiting development in some floodplain fringe areas and dam inundation areas. Goal S-10 is in regard to floodways and floodplain capacities and is accomplished by policies S-10.1 through S-10.6, which limit new or expanded uses in floodways; require, with exceptions, the use of natural channels for County flood control facilities; and provide guidance for flood control facilities and stormwater management and drainage facilities.

## Conservation and Open Space Element

Goal COS-4 is a water management goal for a balanced and regionally integrated water management approach and is accomplished by policies COS-4.1 through COS-4.4, which require development to reduce the waste of potable water, require efficient irrigation systems, maximize stormwater filtration and/or infiltration, and require appropriate measures to protect water supply sources in areas with a high potential for contamination.

Goal COS-5 is for the protection and maintenance of water resources, including local reservoirs, watersheds, aquifer recharge areas, and natural drainage systems to maintain high-quality water resources. This is accomplished by policies COS-5.1 through COS-5.5, which require restricted development in floodplains and floodways, and minimization of impervious surfaces, which would impair groundwater recharge and contribute to stormwater runoff and heat retention. In addition, the goal is accomplished through downslope protection, removal of invasive species to restore natural drainage systems, and requiring development to avoid impacts to water quality in local water sources.

## Land Use Element

Goal LU-6 is for a development and environmental balance, and is accomplished through policies LU-6.5, LU-6.9, LU-6.10, and LU-6.12, which require sustainable stormwater management, development in conformance with the natural topography, requirements to locate development to protect residents and property from natural and manmade hazards, and documentation and annual reviews of areas within 100- and 200-year floodplains to ensure areas subject to flooding are accurately mapped.

Goal LU-8 is conservation for aquifers and groundwater, and is accomplished through policies LU-8.1 and LU-8.2, which require land use densities in groundwater-dependent areas to be consistent with the long-term sustainability of groundwater supplies, except in the Borrego Valley, and require development to identify adequate groundwater resources in groundwater-dependent areas, as follows:

- In areas dependent on currently identified groundwater overdrafted basins, prohibit new development from exacerbating overdraft conditions. Encourage programs to alleviate overdraft conditions in Borrego Valley.
- In areas without current overdraft groundwater conditions, evaluate new groundwater-dependent development to assure a sustainable long-term supply of groundwater is available that will not adversely impact existing groundwater users.

Goal LU-13 is an adequate water quality, supply, and protection, and is accomplished by policies LU-13.1 and LU-13.2, which coordinate water infrastructure planning with land use planning to maintain a high

quality and sustainable water supply and require new development to identify adequate water resources prior to approvals.

Goal LU-14 addresses adequate wastewater disposal and is accomplished by policies LU-14.2 through LU-14.4, which require that development provide for the adequate disposal of wastewater concurrent with the development, require wastewater treatment facilities serving more than one private property owner to be operated and maintained by a public agency, and prohibit sewer facilities that would induce unplanned growth. These policies are further described in the General Plan.

### ***2.8.2.9 Alpine CPU Policies***

There are Alpine CPU goals found in the Land Use Element and Conservation and Open Space Element intended to protect hydrology and water quality. These goals are summarized below.

#### **Land Use Element**

Goal LU-6 is to encourage a balance of land uses, which will conserve natural and man-made resources and will accommodate people of diverse lifestyles, occupations, and interests.

#### **Conservation and Open Space Element**

Goal COS-1 is to promote the well-planned management of all valuable resources, natural and man made, and prevent the destruction and wasteful exploitation of natural resources, where feasible.

### **2.8.3 Analysis of Project Effects and Determination as to Significance**

Based Appendix G of the State CEQA Guidelines, County of San Diego Guidelines for Determining Significance – Hydrology (County of San Diego 2007a), County of San Diego Guidelines for Determining Significance – Surface Water Quality (County of San Diego 2007b), and the County of San Diego Guidelines for Determining Significance – Groundwater Resources (County of San Diego 2007c) the proposed project would result in a significant impact if it would:

- Violate any waste discharge requirements, otherwise degrade water quality or violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site.
- Substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site.
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map.

- Place structures within a 100-year flood hazard area which would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

### ***2.8.3.1 Issue 1: Violate any waste discharge requirements, otherwise degrade water quality or violate any water quality standards or waste discharge requirements.***

#### **Guidelines for the Determination of Significance Analysis**

The proposed project would have a significant impact if it would violate any water quality standards, otherwise degrade water quality, or violate any water quality standards or waste discharge requirements.

#### **Impact Analysis**

The prior EIRs determined that future development would have the potential to result in impacts related to violating water quality standards or otherwise degrading water quality and would have the potential to result in a cumulative impact associated with water quality standards. In addition, the prior EIRs, determined that future development would result in potentially significant impacts to water quality from proposed land uses in groundwater-dependent areas that are currently experiencing groundwater contamination. The discussion of impacts associated with water quality standards from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. While implementation of mitigation measures and General Plan policies would reduce impacts, the prior EIRs determined that future development in areas currently experiencing groundwater contamination would exacerbate water quality impacts. Therefore, impacts associated with groundwater quality would not be mitigated to below a level of significance and were determined to be significant and unavoidable. The mitigation measures identified in the prior EIRs were based on implementation of the identified regulatory requirements. In the analyses below, the proposed project assumes implementation of these regulatory requirements prior to significance determination.

Future development within the Alpine CPA associated with implementation of the proposed project would have the potential to contribute to a violation of water quality standards or degradation of surface water or groundwater quality, as the proposed land use changes would result in an increase in intensity, density, and the number of potential dwelling units that could be developed at buildout of the community plan. The discussion of impacts for these issues is organized into the following subsections: (1) Construction Impacts and (2) Operational Impacts.

#### ***Surface Water Quality***

##### **Construction Impacts**

The increased development densities in three of the subareas (Subareas 2, 4, and 6) would have the potential to result in additional sources of polluted runoff that would have short-term impacts on surface water quality through activities such as demolition, clearing and grading, excavation of undocumented fill materials, stockpiling of soils and materials, concrete pouring, painting, and asphalt surfacing. Typically, construction activities involve various types of equipment such as dozers, scrapers, graders, loaders,



compactors, dump trucks, cranes, water trucks, and concrete mixers. Additionally, soils are typically stockpiled outdoors and used later during construction. Pollutants associated with these construction activities include soils, debris, other materials generated during demolition and clearing, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials.

Pollutants associated with construction would degrade water quality if they are carried by stormwater or other runoff into surface waters. Table 2.8-2 identifies watersheds within the Alpine CPA that contain impaired water bodies as defined by the CWA 303(d) list. Sediment is often the most common pollutant associated with construction sites because of the associated earth-moving activities and areas of exposed soil. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving water, it can smother species, alter the substrate and habitat, and alter the drainage course. Hydrocarbons such as fuels, asphalt materials, oils, and hazardous materials such as paints and concrete slurries discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm drainage channels to downstream surface waters and could impact wildlife as well as aesthetic quality.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

All discretionary projects, including grading permits, are subject to review by the County for impacts on water quality. Under the NPDES Construction General Permit program, SWPPPs must be prepared, and the BMPs identified in the SWPPPs must be implemented for construction sites greater than 1 acre, in order to reduce the occurrence of pollutants in surface water. The NPDES Permit is updated periodically and new development would be required to comply with the updated regulations. In compliance with the applicable Construction General Permit, the future development would be required to implement BMPs that minimize disturbance, protect slopes, reduce erosion, and limit or prevent various pollutants from entering surface water runoff. While these measures help prevent degradation of water quality associated with construction sites greater than 1 acre, smaller construction activities would still have the potential to contribute pollutants such as soils, debris, and other materials in quantities that would exceed water quality standards and otherwise significantly degrade water quality.

Future development projects allowed under the proposed project would be required under the MS4 NPDES permit program to include minimum BMPs, such as silt fencing, desilting basins, sediment traps and check dams, street sweeping, stormdrain inlet protection, sandbag barriers, straw bale barriers, gravel bag berms, and fiber rolls to reduce the discharge of pollutants associated with the small construction sites. For projects that are under 1 acre, the construction requirements identified in the County's WPO would be required to be implemented during construction. Section 67.806 of the WPO includes the list of general BMP requirements applicable to all dischargers. Section 67.809 (Attachment 2.2) of the WPO includes the list of additional BMPs to be implemented and maintained for all construction projects.

### *Summary*

The proposed project would allow for a greater number of housing units within Subareas 2, 4, and 6 of the Alpine CPA. There would be a reduction of housing units in Subarea 5, and no change in Subareas 1, 3, and 7. This would result in additional construction activities compared to the development allowed under the current General Plan (Impact-HYD-1) and may cause a greater level of disturbance and increased impervious surfaces. Although there are increased development densities in three subareas, reasonably foreseeable construction of future development is not likely to cause a more severe impact related to surface water quality standards and requirements compared with that identified in the prior EIRs. The

proposed project would be required to adhere to all regulations and requirements, and impacts would be greater than those impacts identified in the prior EIRs. With implementation of the prior EIRs mitigation measures Hyd-1.1 through Hyd-1-5, impacts associated with construction would be **less than significant**.

### *Operational Impacts*

The proposed project would generate pollutants associated with the new land uses. The increased development densities allowed under the proposed project within three of the subareas of the Alpine CPA would allow more housing units, which would have the potential to generate additional pollutants, if developed and operational. Multiple constituents associated with residential land use operations have the potential to degrade surface water quality following construction, including sediment discharge due to post-construction areas being left bare and eroded by stormwater discharges; nutrients from fertilizers; household hazardous waste that is improperly disposed of, including heavy metals and organic compounds; trash and debris deposited in drain inlets by new residents; oil and grease; byproducts resulting from vehicle use, including heavy metals; bacteria and viruses; and pesticides from landscaping, agriculture, or home use. Generally, these can be referred to as non-point source pollutants. Thus, increased runoff from future development would contribute to non-point source pollution in surface and groundwater bodies.

As stated above, within the Alpine CPA, eight water bodies are in violation of water quality standards. Table 2.8-2 identifies watersheds within the Alpine CPA that contain impaired water bodies as defined by the CWA 303(d) list and shows the major pollutant/stressor for each impaired water body. Implementation of the proposed project would result in increased residential development densities that, if developed, would add pollutants to surface water bodies that could potentially violate water quality standards. The increased residential land use densities under the proposed project could increase urban runoff containing oil, grease, metals, pathogens, TDS, sediments, or toxic chemicals. WMAs that would be impacted by the proposed project include the San Diego River WMA and the San Diego Bay WMA (including Sweetwater HU). Both of these WMAs have water bodies listed on the impaired water body list, as defined by the CWA 303(d) list (see Table 2.8-2). The proposed project could potentially result in increased development densities that could contribute additional point and non-point source pollutants within WMAs in violation of water quality requirements.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

Federal, state, and local regulations exist that reduce the potential for projects to violate water quality standards. As identified in the Regulatory Setting, above, the County's JRMP, BMP Manual, LID Handbook, and WPO require each proposed project to implement measures to ensure that (1) pollutant discharges and runoff flows from development are reduced to the maximum extent practicable; (2) receiving water quality objectives are not violated throughout the life of the project; and (3) runoff flows from development are managed to reduce erosive forces that may impact surface water beneficial use and/or habitat. These regulatory requirements were also identified in the prior EIRs as mitigation measures Hyd-1.2 through Hyd-1.5.

In accordance with the WPO and BMP Manual, the County requires the development of an SWQMP to be submitted with discretionary and ministerial permit applications. The purpose of the SWQMP is to mitigate stormwater impacts by identifying effective LID features and permanent BMPs for implementation. The SWQMP review process considers the project location, receiving water quality, anticipated project impacts and associated pollutants, and mitigation for impacts with the selection of BMPs. The SWQMP provides needed information to address both stormwater and non-stormwater issues. The SWQMP is prepared for essentially all actions associated with increases to impervious surfaces.

Larger projects receive more in-depth analysis and have more stringent requirements pursuant to the WPO and BMP Manual.

### *Summary*

Because the proposed project would allow for a greater number of housing units resulting in the potential for additional point and non-point source pollutants compared to the current General Plan, operational impacts on surface water quality would be more severe. Therefore, due to the increased development densities proposed in the Alpine CPA, operation of the proposed project would cause a more severe impact than identified in the prior EIRs (Impact-HYD-2). However, because future development allowed by the Alpine CPU would also be required to comply with the County's JRMP, BMP Manual, LID Handbook, and WPO, and permanent BMPs (i.e., source control, site design, and structural) would be implemented to reduce the discharge of pollutants to the maximum extent practicable, the impact would be reduced to **less than significant** compared to those impacts identified in the prior EIRs.

### *Groundwater Quality*

#### **Construction Impacts**

The increased development densities allowed under the proposed project would allow more housing units than the current General Plan, which could result in excavation of soils in depths that result in groundwater dewatering activities. Should these occur in areas of groundwater contamination, the dewatering activities could result in water quality degradation if discharged to surface water, as the surface water eventually recharges the groundwater aquifer.

During construction, hazardous materials (e.g., fuels, paints, solvents, concrete additives, etc.) could be used and therefore would require proper management and, in some cases, disposal. The management of any resultant hazardous wastes could increase the potential for hazardous materials releases into groundwater.

#### *Federal, State, and Local Regulations and Existing Regulatory Processes*

Compliance with all applicable federal, state, and local requirements concerning the handling, storage, and disposal of hazardous waste would effectively reduce the potential for the construction of the proposed project to release contaminants into groundwater that could expand the area or increase the level of groundwater contamination or cause the violation of regulatory water quality standards. Additionally, pumped groundwater must be tested to determine if it is contaminated, and the water must be collected and disposed of in accordance with the San Diego RWQCB's General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters Permit (Order NO. R9-2015-0013).

### *Summary*

Because the proposed project has the potential to expand the area of construction, the proposed project has the potential to increase the level of groundwater contamination or increase the potential for the violation of regulatory water quality standards compared to the development allowed under the current General Plan (Impact-HYD-3). Future development associated with the proposed project would be required to comply with all federal, state, and local requirements concerning the handling, storage, and disposal of hazardous waste, and the impact would be reduced similar to those impacts identified in the prior EIRs with mitigation measures identified in Sections 2.7.4 and 2.8.6. Therefore, the proposed project would result in **less than significant** impacts on groundwater quality during construction.

### *Operational Impacts*

The proposed project would allow for construction in groundwater-dependent areas that are currently experiencing groundwater contamination, and the increased development densities allowed under the proposed project would allow more housing units, which could exacerbate groundwater contamination. As described in Section 2.8.1, the Padre Dam Municipal Water District serves Subareas 1, 2, 3, 4, 6, and 7, as well as a portion of Subarea 5. A majority of Subarea 5 is outside of the Padre Dam Municipal Water District and SDCWA service boundaries. Within the Alpine CPU area, the majority of Subarea 5 is entirely groundwater-dependent; however, under the proposed project, Subarea 5 land use changes would result in a slight decrease of dwelling units, and therefore would not impact groundwater services.

Groundwater impacts associated with gasoline, which include benzene and MTBE, have been identified within Subareas 2 and 6. New wells constructed to support development in these areas would be potentially susceptible to inducing the flow of contaminated groundwater, which could result in the spread of the groundwater contamination plumes. This would be considered a potentially significant impact associated with groundwater quality because it could exacerbate the existing condition.

In addition, the proposed land uses could result in the construction of septic tanks. The use of septic tanks has the potential to result in groundwater contamination should septic tanks not be properly sited, maintained, or constructed. The San Diego Basin Plan incorporated the SWRCB OWTS Policy and identifies the criteria to be used to regulate OWTS in the San Diego Region. The purpose of the OWTS Policy is to allow for the continued use of OWTS, including septic tanks, while protecting water quality and public health. Therefore, assuming compliance with the Basin Plan regarding implementation of septic tanks, impacts on groundwater quality due to construction of septic tanks would be less than significant.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

Groundwater-dependent areas with existing groundwater contamination would not be able to support new development due to the non-potable (contaminated) water supply in the area, which would not comply with the Safe Drinking Water Act. Groundwater with contaminants that exceed the federal and state primary maximum contaminant levels (MCLs) is not considered potable. Therefore, any land uses or construction of development allowable under the proposed project and dependent on groundwater for potable uses with existing contamination would not have a viable source of water.

The Alpine CPA experiences groundwater quality issues associated with Leaking Underground Fuel Tank (LUFT) sites, nitrates, and radiochemicals. Projects proposing the use of groundwater must demonstrate a viable water supply that meets state standards associated with the Safe Drinking Water Act. Samples must be analyzed for radionuclides, nitrates, and other contaminants depending on location. If applicable standards cannot be met, alternative sources or treatment is required. Groundwater-dependent land uses proposed in the areas identified as having potential water quality impacts would potentially depend on a groundwater supply that contains water quality constituents at concentrations above primary federal or state MCLs, thus not currently meeting water quality standards. Areas adjacent to Subareas 3 and 5, and north of Subarea 6 contain groundwater with nitrate levels that currently exceed water quality standards and therefore limit the availability of potable groundwater.

### *Summary*

The proposed project would allow for the construction of new wells in areas with contaminated groundwater that do not meet the Safe Drinking Water Act standards. In addition, the activities associated with the various land use changes associated with the proposed project have the potential to impact

surface water quality, which would in turn impact groundwater. This would potentially result in the spread of contaminated groundwater compared to the prior EIRs. Future development associated with the proposed project would be required to comply with all federal, state, and local requirements concerning the handling, storage and disposal of hazardous waste. While this would reduce the proposed project impact, the increased development densities proposed have the potential to cause a more severe potentially significant impact related to groundwater quality standards and requirements compared to that identified in the prior EIRs. This would be considered a **significant impact (Impact-HYD-4)**.

### ***2.8.3.2 Issue 2: Deplete Groundwater Supplies and Interfere with Recharge***

#### **Guidelines for the Determination of Significance Analysis**

The proposed project would have a significant impact if it would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that a net deficit in aquifer volume or a lowering of the local groundwater table level would occur (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).

#### **Impact Analysis**

The prior EIRs determined future development would have the potential to affect groundwater supplies and recharge and would have the potential to result in a cumulative impact associated with groundwater resources. The discussion of impacts associated with groundwater supplies and recharge from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Implementation of mitigation measures and General Plan policies would reduce impacts. However, impacts associated with groundwater supplies and recharge would not be mitigated to below a level of significance because implementation of the 2011 General Plan and FCI GPA would allow land uses and development to occur in areas currently experiencing groundwater supply and recharge impacts, thereby worsening an already unsustainable groundwater supply. Therefore, impacts on groundwater supplies and recharge would be significant and unavoidable.

Within the proposed project area, the Padre Dam Municipal Water District serves Subareas 1, 2, 3, 4, 6, and 7, as well as a portion of Subarea 5. A majority of Subarea 5 is outside of the Padre Dam Municipal Water District and SDCWA service boundaries and is groundwater dependent. The proposed decrease in density in Subarea 5 would result in a reduction of 31 dwelling units and therefore would not substantially change dependency on groundwater.

Future development in Subareas 2, 4, and 6 could interfere with groundwater recharge by increasing impervious surfaces associated with new residential and commercial buildings, roadways, parking lots, and sidewalks; however, the increase in units is not significantly greater than under the current General Plan.

#### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

The County currently manages anticipated future groundwater demand through the County Groundwater Ordinance (Ordinance #9826, N.S.) and during project-specific CEQA review of discretionary permits. The Groundwater Ordinance does not limit the number of wells or the amount of groundwater extraction by existing landowners but does have specific measures to mitigate potential groundwater impacts of projects requiring specified discretionary permits. In addition, the Ordinance includes residential density

controls that identify minimum parcel sizes for single-family residential development in groundwater-dependent areas. Future development associated with the Alpine CPU in groundwater-dependent areas would be subject to these regulatory requirements.

The 2011 General Plan includes several policies within the Conservation and Open Space Element and the Land Use Element that would reduce the potential for the Alpine CPU to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. These policies are summarized in Section 2.8.2.8, above.

### ***Summary***

The development potential associated with the proposed project would be greater than what was anticipated in the 2011 General Plan, and the potential amount of impervious surfaces that could interfere with groundwater recharge could also be increased. An increase in housing units is only proposed in Subareas 2, 4, and 6, and a decrease of units is proposed in Subarea 5. The proposed project would comply with all policies and regulations related to groundwater supply and recharge. Even though the proposed project only proposes a slight increase in housing units compared to the current General Plan, there is still potential for a more severe impact related to depleting groundwater supplies and interfering with recharge compared to that identified in the prior EIRs (Impact-HYD-5). This would be considered a **significant impact**.

### ***2.8.3.3 Issue 3: Result in Erosion or Siltation***

#### **Guidelines for the Determination of Significance Analysis**

The Alpine CPU would have a significant impact if it would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site.

#### **Impact Analysis**

The prior EIRs determined that future development would have the potential to alter the existing drainage patterns of a site or area, which could result in substantial erosion or siltation on or off site, and would have the potential to result in a cumulative impact related to erosion or siltation. The discussion of impacts associated with erosion or siltation from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures and General Plan policies, because policies and mitigation would require compliance with the JRMP; LID standards; Grading, Clearing and Watercourses Ordinance; RPO; and development requirements that maximize natural drainage and topography when conveying stormwater.

For this issue, the discussion of impacts is organized into the following subsections: (1) Construction Impacts and (2) Operational Impacts.

#### ***Construction Impacts***

Future development allowed under the proposed project would result in land-disturbing activities from the construction of residential and commercial structures, and infrastructure needed to support future development. The proposed increased development densities would result in more residential development than the current General Plan. These activities would alter drainage patterns in a manner that could result in substantial erosion or siltation on or off site. Land-disturbing construction activities,

such as the grading and excavation of land for construction of new building foundations, roads, driveways, and trenches for utilities, have the potential to result in localized temporary or permanent alteration of drainage patterns, or *hydromodification*. Hydromodification refers to changes in the magnitude and frequency of stream flows because of urbanization and the resulting impacts on the receiving channels in terms of erosion, sedimentation, and degradation of in-stream habitat. This can lead to indirect effects on communities and sensitive biological resources downstream in the watershed, including the deposition of pollutants and sediment to the watershed outlets, an increase in polluted runoff to surface and groundwater receiving bodies, and an increase in the flood potential downstream.

### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

As described under surface water quality, future construction activities within the Alpine CPA would be required to comply with the NPDES permit program, which requires a SWPPP to be prepared and BMPs to be implemented for construction sites greater than 1 acre. Additionally, all land disturbance activities occurring within the Alpine CPA would be subject to the discharge prohibitions and additional requirements stated in the County WPO. Adherence to existing regulations would limit erosion by minimizing site disturbance to the maximum extent practicable and installing erosion control BMPs to prevent off-site sediment discharges; as such, impacts would be less than significant.

In addition, the prior EIRs identified several mitigation measures in Sections 2.7.4 and 2.8.6 addressing impacts related to erosion that would be applicable to the proposed project, including Hyd-1.2 through Hyd-1.5 and Hyd-3.1 through Hyd-3.3. Implementation of the same General Plan policies and prior EIRs mitigation measures and compliance with existing regulations would further reduce the proposed project's less than significant impacts related to erosion because these measures require the establishment and enforcement of standards and regulations to reduce adverse effects of polluted runoff.

### ***Summary***

While the proposed project would allow for an increase of housing units in Subareas 2, 4, and 6, there would no change in units in Subareas 1, 3, and 7, and a decrease of units would occur in Subarea 5. The proposed project would result in additional construction activities compared to the current General Plan (Impact-HYD-6) in Subareas 2, 4, and 6; however, these impacts would be minimized with compliance with the Construction General Permit and County WPO requirements for all construction sites. Therefore, while impacts may occur, the overall impacts would be similar in nature to those identified in the prior EIRs, and construction impacts related to erosion and siltation would be **less than significant**.

### ***Operational Impacts***

Development of land uses designated in the proposed project would result in the construction of residential structures and other features within the Alpine CPA that are anticipated to result in permanent alterations to existing drainage patterns by increasing density and converting areas from pervious surfaces to impervious surfaces. Allowing the permanent development of impervious surfaces within the Alpine CPA could increase runoff and potentially result in new erosion problems or the worsening of existing erosion problems. Development of land uses designated in the Alpine CPU could result in alterations to existing drainage patterns in a manner that could result in substantial erosion or siltation on or off site.

### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

There are a number of federal, state, and local regulations in place to reduce on- and off-site erosion with which the Alpine CPU is required to comply. The MS4 permit requires certain PDPs to comply with

hydromodification management requirements, as specified in the County's BMP Manual, which address flow duration impacts and critical sediment yield areas, as well as on-site BMPs to manage hydromodification that may be caused by stormwater runoff discharged from a project. Hydromodification management BMPs manage increases in runoff discharge rates and durations from specific projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other adverse impacts on beneficial uses and stream habitat due to increased erosive force. The purpose of hydromodification management requirements for PDPs is to minimize the potential of stormwater discharges from the MS4 from causing altered flow regimes and excessive downstream erosion in receiving waters. PDPs subject to hydromodification management requirements must provide flow control for post-project runoff to meet the flow control performance standard. Additional existing regulations include the NPDES, which regulates pollutant discharges to surface waters of the US; the County Grading, Clearing and Watercourses Ordinance, which requires work to be conducted in such a manner as to protect against both short-term and long-term erosion and instability; WPO, which protects water resources and improves water quality; and LID, which establishes stormwater management techniques. As a result of these requirements, discretionary projects are reviewed for hydrology in a manner similar to that used for stormwater quality. Regulations require site design to account for hydrology, and drainage studies are required for projects with significant increases in impervious surfaces. Projects are discouraged from diverting or increasing flows that cross a site. Larger projects are subject to hydromodification requirements and must develop a project-level Hydromodification Management Plan.

The General Plan also includes several policies within the Conservation and Open Space Element and the Land Use Element that would further reduce the potential for the Alpine CPU to alter the existing drainage patterns of a site or area. The prior EIRs identified several mitigation measures addressing impacts related to erosion and siltation that would be applicable to the proposed project, including Hyd-1.2, Hyd-1.3, Hyd-1.5, and Hyd-3.1 through Hyd-3.3. These measures generally require that development maximize natural drainage and topography when conveying stormwater; comply with the JRMP; LID Handbook; Grading, Clearing and Watercourses Ordinance; and RPO, and implement measures to ensure that runoff flows from development are reduced to the maximum extent practicable and are managed to reduce erosive forces that may impact surface water beneficial use and/or habitat.

### *Summary*

The proposed project could allow for the development of a greater number of housing units compared to the current General Plan. Due to the increased development densities proposed in the Alpine CPA, operation of the proposed project could cause additional impacts related to erosion or siltation on or off site compared to that identified in the prior EIRs (Impact-HYD-7). Implementation of the General Plan policies and prior EIRs mitigation measures identified above and compliance with existing regulations would reduce the proposed project's impacts related to erosion and siltation to a **less than significant** level.

### ***2.8.3.4 Issue 4: Result in Flooding***

#### Guidelines for the Determination of Significance Analysis

The proposed project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.



## Impact Analysis

The prior EIRs determined that future development would have the potential to result in substantial alteration of existing drainage patterns and increase the rate or amount of surface runoff in a manner that would result in flooding on or off site during and after construction activities. In addition, the prior EIRs concluded that the 2011 General Plan and FCI GPA would have the potential to result in a cumulative impact associated with flooding. The discussion of impacts associated with flooding from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures that require compliance with LID standards to reduce runoff, limit development in floodplains, encourage use of natural channels, and utilize hydromodification management. Other mitigation measures that minimize stormwater impacts on drainage and flood control facilities were implemented to reduce impacts. The General Plan policies include measures that require implementing the Flood Damage Prevention Ordinance to reduce flood losses in specified areas and the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses.

The discussion of impacts for this issue is organized into the following subsections: (1) Construction Impacts and (2) Operational Impacts.

### ***Construction Impacts***

The proposed project includes increased densities in Subareas 2, 4, and 6;; decreased density in Subarea 5; and no change in density in Subareas 1, 3, and 7. The three subareas with proposed increased density would result in more development compared to the current General Plan. This increase in future development would result in temporary or permanent alteration of existing drainage patterns or stream flows and/or contribute to an increase in impervious surfaces. Land-disturbing construction activities associated with the development of future land uses as designated by the proposed project, such as grading and excavation, construction of new building foundations, roads, driveways, and trenches for utilities, would result in the localized alteration of drainage patterns. Temporary ponding and/or flooding could result from activities such as temporary alterations of the drainage system or the temporary creation of a sump condition. Such activities would have the potential to increase the rate or amount of surface runoff that may in turn result in flooding on or off site.

### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

Future projects would need to comply with a number of local regulations that govern the rate or amount of surface runoff. The MS4 permit requires certain PDPs to comply with hydromodification management requirements, as specified in the BMP Manual, which address flow duration impacts and critical sediment yield areas; the permit also requires on-site BMPs to manage hydromodification that may be caused by stormwater runoff discharged from a project. The purpose of hydromodification management requirements for PDPs is to minimize the potential of stormwater discharges to alter flow regimes, leading to flooding. PDPs subject to hydromodification management requirements must provide flow control for post-project runoff to meet the flow control performance standard.

Another relevant regulation is the WPO, which requires PDPs to implement BMPs designed to retain (i.e., intercept, store, infiltrate, evaporate, and evapotranspire) on site the pollutants contained in the volume of stormwater runoff produced from a 24-hour, 85th percentile storm event (DCV). As a result of these requirements, discretionary projects are reviewed for hydrology in a manner similar to that used for stormwater quality. Regulations require site design to account for hydrology and drainage studies are required for projects that would significantly increase impervious surfaces. Projects are discouraged from

diverting or increasing flows that cross a site, and larger projects are subject to hydromodification requirements and must develop a project-level Hydromodification Management Plan.

The prior EIRs identified several mitigation measures in Sections 2.7.4 and 2.8.6 addressing impacts related to flooding on or off site that would be applicable to the proposed project, including Hyd-1.2 through Hyd-1.5, Hyd-2.5, and Hyd-4.1 through Hyd-4.3. These measures require compliance with the WPO and LID standards that limit runoff that results in flooding; require compliance with the RPO to restrict development in floodplains/floodways; require the implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; require the implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses; and require implementation and revision of BOS Policies that relate to impacts on floodways and flood-control measures.

### *Summary*

The proposed project has the potential to result in construction impacts related to altering the existing drainage pattern or increasing the rate or amount of surface runoff that would be more severe compared to the development allowed under the current General Plan (Impact-HYD-8). Implementation of the General Plan policies and prior EIRs mitigation measures, and compliance with existing regulations, would reduce the proposed project's impacts related to flooding on- or off-site to a **less than significant** level.

### *Operational Impacts*

The proposed project increases density in Subareas 2, 4, and 6, and therefore has the potential to alter the existing drainage pattern of a site or area by increasing the amount and rate of surface runoff, potentially resulting in flooding on or off site. Additionally, impermeable surfaces and development could create a diversion from the natural runoff pattern and potentially result in flooding.

In undeveloped areas, rainfall collects and is stored on vegetation, in the soil column, or in surface depressions. When this storage capacity is filled, runoff flows slowly through the soil as subsurface flow. In contrast, developed areas, where much of the land surface is covered by roads and buildings, have less capacity to store rainfall. Impermeable surfaces such as roads, roofs, parking lots, and sidewalks store little water and reduce infiltration of water into the ground, which accelerates runoff to ditches and streams.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

Future projects would need to comply with a number of local regulations that govern the rate or amount of surface runoff. The MS4 permit requires certain PDPs to comply with hydromodification management requirements, as specified in the BMP Manual, which address flow duration impacts and critical sediment yield areas; the permit also requires on-site BMPs to manage hydromodification that may be caused by stormwater runoff discharged from a project. The purpose of hydromodification management requirements for PDPs is to minimize the potential of stormwater discharges to alter flow regimes, leading to flooding. PDPs subject to hydromodification management requirements must provide flow control for post-project runoff to meet the flow control performance standard.

Another relevant regulation is the WPO, which requires PDPs to implement BMPs designed to retain (i.e., intercept, store, infiltrate, evaporate, and evapotranspire) on site the pollutants contained in the volume of stormwater runoff produced from a 24-hour, 85th percentile storm event (DCV). As a result of these requirements, discretionary projects are reviewed for hydrology in a manner similar to that used

for stormwater quality. Regulations require site design to account for hydrology and drainage studies are required for projects that would significantly increase impervious surfaces. Projects are discouraged from diverting or increasing flows that cross a site, and larger projects are subject to hydromodification requirements and must develop a project-level Hydromodification Management Plan.

The General Plan also includes several policies within its Land Use Element and Safety Element that would reduce the potential for the proposed project to result in flooding on or off site. In addition, the prior EIRs identified several mitigation measures addressing impacts related to flooding on or off site that would be applicable to the proposed project, including Hyd-1.2 through Hyd-1.5, Hyd-2.5, and Hyd-4.1 through Hyd-4.3. These measures require compliance with the WPO and LID standards that limit runoff that results in flooding; require compliance with the RPO to restrict development in floodplains/ floodways; require the implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; require the implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses; and require implementation and revision of BOS Policies that relate to impacts on floodways and flood-control measures..

### *Summary*

The proposed project has the potential to result in operational impacts that would be more severe compared to the development allowed under the current General Plan (Impact-HYD-9). Implementation of the General Plan policies and prior EIRs mitigation measures, and compliance with existing regulations, would reduce the proposed project's operational impacts related to flooding on- or off-site to a **less than significant** level.

### ***2.8.3.5 Issue 5: Exceed Capacity of Stormwater Systems***

#### Guidelines for the Determination of Significance Analysis

The proposed project would have a significant impact if it would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

#### Impact Analysis

The prior EIRs determined future development would have the potential to contribute runoff in a manner that would exceed existing stormwater drainage facilities. In addition, the prior EIRs concluded that the 2011 General Plan and FCI GPA would not contribute to a significant cumulative impact associated with the capacity of stormwater systems. The discussion of impacts associated with the capacity of stormwater systems from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures. Mitigation included measures requiring compliance with the WPO and LID standards, which limit runoff that results in flooding; and the RPO to restrict development in floodplains/floodways. Additionally, mitigation measures require the implementation of the Flood Damage Prevention Ordinance, to reduce flood losses in specified areas, and implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses. Relevant General Plan policies would reduce the potential for exceeding existing stormwater drainage facilities, by requiring development to provide necessary on- and off-site improvements to stormwater runoff and drainage facilities, efficient irrigation systems, and stormwater filtration; require protection of water supply sources; and require development to minimize impervious surfaces.

The proposed project would increase densities in Subareas 2, 4, and 6 and has the potential to result in more development and impermeable surfaces compared to the current General Plan. Drainage facilities, including storm drains, culverts, inlets, channels, curbs, roads, or other such structures, are designed to prevent flooding by collecting stormwater runoff and directing flows to either the natural drainage course and/or away from urban development. If drainage facilities within the Alpine CPA 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.

Future development associated with the Alpine CPU in Subareas 2, 4, and 6 could exceed the capacity of the County's existing or planned stormwater drainage facilities. Construction and/or post-construction activities would have the potential to alter existing drainages and hydrology or increase the impermeable surfaces within Subareas 2, 4, and 6, thereby increasing the volume or rate of runoff. Future development would be required to incorporate design elements such as storm drains, ditches, swales, or other means of conveying runoff. If drainage facilities are not adequate to accommodate a potential increase in stormwater flows, overflow or failure of such systems may occur, causing an exceedance in the capacity of the County's stormwater systems.

### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

The WPO regulation requires development projects to demonstrate they have provided stormwater facilities sized appropriately to accommodate runoff flows. Additional environmental regulations related to stormwater drainage facilities and stormwater discharges include Federal CWA, which regulates discharges of pollutants into waters of the US; California Water Code, which controls almost all considerations of water and its use; and Porter-Cologne Water Quality Control Act, which controls polluted discharges into state waters. These regulations often result in alternative ways of managing stormwater runoff other than constructing new conveyance systems or drainage facilities, such as reducing impervious surfaces in site design, incorporating LID techniques, and employing low-impact BMPs.

The General Plan includes several policies within the Conservation and Open Space Element, Land Use Element, and Safety Element that would reduce the potential for the Alpine CPU to exceed the capacity of the existing stormwater drainage facilities.

In addition, the prior EIRs identified several mitigation measures addressing impacts related to stormwater drainage facilities that would be applicable to the proposed project, including Hyd-1.2 through Hyd-1.5, Hyd-2.5, Hyd-3.1, and Hyd-4.1 through Hyd-4.3. These measures require compliance with the WPO and LID standards that limit runoff that results in flooding; require compliance with the RPO to restrict development in floodplains/floodways; implement and revise ordinances to require new development to be located down and away from ridgelines, conform to the natural topography, not significantly alter dominant physical characteristics of the site, and maximize natural drainage and topography when conveying stormwater; require the implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; require the implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses; and require implementation and revision of BOS Policies that relate to impacts on floodways and flood-control measures.

### ***Summary***

The proposed project would increase the development densities in Subareas 2, 4, and 6, compared to the current General Plan, therefore creating potential to increase the amount of impervious surfaces. Therefore, due to the increased development densities proposed, the proposed project would cause a

more severe impact related to exceeding existing stormwater drainage facilities compared to that identified in the prior EIRs (Impact-HYD-10). However, the proposed project would implement the applicable drainage and hydrology regulations and the proposed project would result in **less than significant** impacts on storm drain capacities.

### ***2.8.3.6 Issue 6: Place Housing within a 100-Year Flood Hazard Area***

#### **Guidelines for the Determination of Significance Analysis**

The Alpine CPU would have a significant impact if it would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map.

#### **Impact Analysis**

The prior EIRs determined that future development would result in the placement of housing within flood hazard areas and would not contribute to a significant cumulative impact associated with flood hazard areas. The discussion of impacts associated with flood hazard areas from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures that require compliance with the WPO, which limits runoff that results in flooding; utilization of the County Guidelines for Determining Significance, Surface Water Quality, Hydrology, and Groundwater Resources; compliance with the RPO to restrict development in floodplains/floodways and to prohibit development of permanent structures for human habitation or employment in a floodway and require planning of hillside developments to minimize potential soil, geological, and drainage problems; implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; and implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses. The General Plan provides policies that require development to be restricted in floodways and floodplains; require documentation and annual review of areas prone to flooding; require development management based on federal floodplain maps; allow new uses and development within the floodplain fringe only when environmental impacts and hazards are mitigated; and limit new or expanded uses in floodways to agricultural, recreational, and other such low-intensity uses.

As shown in a 2.8-5, a portion of Subarea 4 is located within a mapped County floodplain and adjacent to Subarea 2 (County of San Diego 2018a). FEMA map floodplains, shown in Figure 2.8-7a, show a mapped floodplain adjacent to Subarea 2. As shown in Figure 2.8-6a, a portion of Subarea 4 is located within a mapped County floodway.

Flood events in such areas could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. Increased development of residential land uses in the floodplain would reduce the County's ability to respond to floodplain issues and would result in a greater potential for conflicts with flooding hazards.

#### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

Federal, state, and local regulations would reduce impacts related to the placement of housing within a 100-year flood hazard area. Because of regulations, development within floodplains, and development

that would have the potential to adversely affect flooding hazards are highly regulated and addressed at all levels of the County development review process.

The General Plan includes several policies within the Conservation and Open Space Element, Land Use Element, and Safety Element that would reduce the potential for the Alpine CPU to result in the placement of housing within flood hazard areas. In addition, the prior EIRs identified several mitigation measures addressing impacts related to housing within a 100-year Flood Hazard Area that would be applicable to the proposed project, including Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1, Hyd-4.2, and Hyd-6.1. These measures require compliance with the WPO, which limits runoff that results in flooding; utilization of the County Guidelines for Determining Significance, Surface Water Quality, Hydrology, and Groundwater Resources; compliance with the RPO to restrict development in floodplains/floodways and to prohibit development of permanent structures for human habitation or employment in a floodway and require planning of hillside developments to minimize potential soil, geological, and drainage problems; implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; and implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses.

### *Summary*

The proposed project would cause more severe impacts related to housing within a 100-year flood hazard area compared to development allowable under the current General Plan (Impact-HYD-11). However, implementation of the General Plan policies, and the prior EIRs mitigation measures, and compliance with existing regulations, would reduce the proposed project's impacts related to housing within a 100-year Flood Hazard Area to a **less than significant** level.

## ***2.8.3.7 Issue 7: Impede or Redirect Flood Flows***

### Guidelines for the Determination of Significance Analysis

The proposed project would have a significant impact if it would place structures within a 100-year flood hazard area, which would impede or redirect flood flows.

### Impact Analysis

The prior EIRs determined future development would not have the potential to impede or redirect flood flows and would not have the potential to result in a cumulative impact associated with impeding or redirecting flood flows. The discussion of impacts associated with impeding or redirecting flood flows from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant and mitigation was not required. The General Plan provides policies that require development to be restricted in floodways and floodplains; require documentation and annual review of areas prone to flooding; require development management based on federal floodplain maps; allow new uses and development within the floodplain fringe only when environmental impacts and hazards are mitigated; and limit new or expanded uses in floodways to agricultural, recreational, and other such low-intensity uses.

Development along stream channels and floodplains can alter the capacity of a channel to convey water and increase the height of the water surface corresponding to a given discharge. Structures that encroach on a floodplain, such as bridges, can increase upstream flooding by narrowing the width of the channel and increasing the channel's resistance to flow. As a result, the water is at a higher level as it flows past the obstruction, creating a backwater that could inundate a larger area upstream.

The proposed project would increase the potential for additional development to occur within 100-year flood hazard areas or the placement of structures that could impede or redirect flood flows within two of the subareas. A portion of Subarea 2 and the southwestern portion of Subarea 4 are located within a 100-year flood hazard area. Future development projects within the Alpine CPA would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

The General Plan includes several policies within the Conservation and Open Space Element, Land Use Element, and Safety Element that would reduce the potential for the Alpine CPU to impede or redirect flood flows. In addition, the prior EIRs identified several mitigation measures addressing impacts related to redirecting or impeding flood flows that would be applicable to the proposed project, including Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1 through Hyd-4.3, and Hyd-6.1. These measures require compliance with the WPO, which limits runoff that results in flooding; utilization of the County Guidelines for Determining Significance, Surface Water Quality, Hydrology, and Groundwater Resources; compliance with the RPO to restrict development in floodplains/floodways and to prohibit development of permanent structures for human habitation or employment in a floodway and require planning of hillside developments to minimize potential soil, geological, and drainage problems; implementation of the Flood Damage Prevention Ordinance to reduce flood losses in specified areas; and implementation of the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses.

### *Summary*

The proposed project would increase the development density within 100-year flood hazard areas as compared to the development allowable under the current General Plan. Therefore, the Alpine CPU would result in potentially significant impacts associated with the placement of structures that would impede or redirect flood flows in areas subject to flood hazards. Due to the increased development densities in Subareas 2, 4, and 6, the proposed project would potentially cause greater impacts related to impeding or redirecting flood flows as compared to the prior EIRs (Impact-HYD-12). However, implementation of the General Plan policies and prior EIRs mitigation measures and compliance with existing regulations would reduce the proposed project's impacts related to impeding and redirecting flood flows to a **less than significant** level.

### ***2.8.3.8 Issue 8: Expose People to Dam Inundation and Flood Hazards***

#### Guidelines for the Determination of Significance Analysis

The proposed project would have a significant impact if it would expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

#### Impact Analysis

The prior EIRs determined future development would have the potential to expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a levee or dam failure, by placing persons or housing in areas subject to flooding risks. In addition, the prior EIRs concluded that the 2011 General Plan and FCI GPA would not contribute to a significant cumulative impact associated with dam inundation and flood hazards. The discussion of impacts associated with dam inundation and flood hazards from implementation of the 2011 General Plan and FCI GPA can be found in

Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures requiring compliance with the WPO; utilization of the County Guidelines for Determining Significance, Surface Water Quality, Hydrology, and Groundwater Resources; compliance with the RPO; implementation of the Flood Damage Prevention Ordinance; implementation of the Grading, Clearing and Watercourses Ordinance; and regular inspections and maintenance of County reservoirs. The General Plan also provides policies requiring development to be restricted in floodways and floodplains; documentation and annual review of areas prone to flooding; development management based on federal floodplain maps; allowing new uses and development within the floodplain fringe only when environmental impacts and hazards are mitigated; and limiting new or expanded uses in floodways to agricultural, recreational, and other such low-intensity uses.

Flood events in areas from dam failure could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. As shown in Figures 2.8-8a and 2.8-8b, approximately 43 acres within existing semi-rural residential land uses in the Alpine CPA are located within dam inundation areas. As shown in Figures 2.8-8a and 2.8-8b, there are no dam inundation zones within the Village Boundary, and none of the subareas are located within dam inundation areas. Therefore, direct impacts of the proposed project with regard to the risk of loss, injury, or death involving flooding from the failure of a levee or dam would be **less than significant**.

### ***Federal, State, and Local Regulations and Existing Regulatory Processes***

Policies within the Conservation and Open Space Element, Land Use Element, and Safety Element that would reduce the potential for the proposed project to expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding because of the failure of a levee or dam. In addition, the prior EIRs identified mitigation measures addressing impacts related to dam inundation and flood hazards, which require regular inspections of dams to prevent failure, and review of discretionary projects for dam inundation hazards; however, as stated above, none of the seven subareas are within dam inundation areas.

### ***Summary***

The proposed project would not result in more severe impacts related to exposure of people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, compared to impacts identified in the prior EIRs. Implementation of the General Plan policies and compliance with existing regulations would ensure the proposed project's impacts related to inundation by mudflow are **less than significant**.

## ***2.8.3.9 Issue 9: Expose People to Seiche, Tsunami, and Mudflow Hazards***

### **Guidelines for the Determination of Significance Analysis**

The proposed project would have a significant impact if it would expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.



## Impact Analysis

The prior EIRs determined that, due to the inland location of the unincorporated County and the history of minor tsunami events, implementation of the 2011 General Plan and FCI GPA would not expose people or structures to hazards associated with inundation by a tsunami and would not result in land uses or development within areas subject to inundation from a seiche. However, the prior EIRs determined that the 2011 General Plan and FCI GPA would locate land uses and development in areas considered susceptible to mudflows. The prior EIRs concluded that the 2011 General Plan and FCI GPA would not have the potential to result in a cumulative impact associated with significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. The discussion of impacts associated with significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow from implementation of the 2011 General Plan and FCI GPA can be found in Sections 2.7 and 2.8, *Hydrology and Water Quality*, of the prior EIRs and is incorporated by reference. Impacts were determined to be less than significant with implementation of mitigation measures that require development projects to maximize natural drainage and topography when conveying stormwater; compliance with the RPO; and compliance with the Grading, Clearing and Watercourses Ordinance. The General Plan also provides policies that restrict development in floodways and floodplains; direct development away from areas with high landslide, mudslide, or rock fall potential; and prohibit development from causing or contributing to slope instability.

Debris flows, also known as mudflows, are shallow water-saturated landslides that travel rapidly down slopes carrying rocks, brush, and other debris. A mudflow occurs naturally as a result of heavy rainfall on a slope containing loose soil or debris. There is potential for mudflows to occur in some areas of the unincorporated County as a result of large amounts of precipitation in a relatively short time frame. Similar direct effects related to mudflow would occur with future development of the proposed project, where structures would be placed within areas subject to mudflow events. Mudflow events in such areas could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. Additionally, areas within the Alpine CPA are susceptible to wildland fires and subsequent flash floods and debris flows during rainstorms. Therefore, the proposed project would result in a potentially significant impact associated with mudflow hazards.

### *Federal, State, and Local Regulations and Existing Regulatory Processes*

The General Plan includes several policies within the Conservation and Open Space Element and Safety Element that would reduce the potential for the proposed project to expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche or mudflow. In addition, the prior EIRs identified several mitigation measures addressing impacts related to inundation by seiche or mudflow that would be applicable to the proposed project, including Hyd-3.1 through Hyd-3.3. These measures require maximizing natural drainage and topography when conveying stormwater; compliance with the RPO to limit development on steep slopes; and compliance with the Grading, Clearing and Watercourses Ordinance to protect development sites against erosion and instability.

### *Summary*

The proposed project would locate land uses and development in areas considered susceptible to mudflows, which has the potential to cause significant impacts related to inundation by mudflow compared to the impact identified in the prior EIRs (Impact-HYD-13). However, implementation of the General Plan policies and prior EIRs mitigation measures and compliance with existing regulations would reduce the proposed project's impacts related to inundation by mudflow to a **less than significant** level.

## 2.8.4 Cumulative Impact Analysis

The geographic scope of the cumulative impact analysis for hydrology and water quality includes cumulative projected growth and development within the San Diego River WMA and the San Diego Bay WMA. For groundwater supplies and recharge, the geographic scope includes cumulative projected growth and development in groundwater-dependent areas of the communities immediately surrounding the Alpine CPA. Lastly, because flooding can be both a localized and watershed-level issue, the geographic scope for flooding-related issues includes future growth and development within the Alpine CPA (outside of the project area) and/or the San Diego River WMA and the San Diego Bay WMA.

### 2.8.4.1 *Issue 1: Violate Water Quality Standards and Requirements*

The prior EIRs concluded that the 2011 General Plan and FCI GPA would have the potential to result in a cumulative impact associated with water quality standards. For the Alpine CPU, a cumulative water quality impact would occur if development associated with cumulative projected growth within the San Diego River WMA or San Diego Bay WMA would violate any water quality standards, otherwise degrade water quality, or violate any waste discharge requirements. Construction and development associated with cumulative projected growth would contribute pollutants to downstream receiving waters that have the potential to violate water quality standards. Cumulative development would be subject to regulations that require compliance with water quality standards, including the CWA; Porter-Cologne Water Quality Control Act; NPDES; applicable basin plans; and local regulations such as the County's JRMP, BMP Manual and WPO, and permanent BMPs (source control, site design, and structural) that would be implemented to reduce the discharge of pollutants to the maximum extent practicable. However, despite these regulations, cumulative development could incrementally contribute pollutants that, when combined, would still have the potential to degrade water quality and result in a cumulatively significant impact. Therefore, cumulative growth and development would result in a significant cumulative impact associated with the violation of water quality standards and requirements.

The proposed project would result in land use changes potentially increasing density and development in three subareas, which has the potential to violate water quality standards and requirements. As discussed in Section 2.8.3.1, future development associated with the proposed project would cause a similar project-level impact related to surface water and groundwater quality compared to the prior EIRs. Future development associated with the Alpine CPU would be required to comply with the above-mentioned regulations, which would reduce potential water quality impacts on an individual basis through implementation of temporary and permanent BMPs.

For the reasons described above, compliance with existing regulations and the implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.1 would reduce project-level impacts on surface water quality to less than significant. However, water quality can be affected by various individual pollutant sources that may be individually limited, but cumulatively considerable when taken into account together. As such, there is a potential that buildout of the Alpine CPU as a whole would contribute pollutants that, when combined with cumulative growth and development, would violate water quality standards and result in a cumulatively considerable impact on surface water quality. In addition, future development associated with the Alpine CPU could degrade groundwater quality.

As a result, future development associated with the Alpine CPU, when combined with cumulative growth and development, would result in a cumulatively considerable contribution to groundwater quality impacts. Therefore, the proposed project would have a **potentially significant cumulative impact (Impact-C-HYD-1)** associated with violating water quality standards and requirements would be similar to those identified the prior EIRs.

### ***2.8.4.2 Issue 2: Deplete Groundwater Supplies and Interfere with Recharge***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would have the potential to result in a cumulative impact associated with groundwater resources. For the Alpine CPU, a cumulative impact associated with groundwater supplies would occur if development associated with cumulative projected growth would be located in groundwater-dependent areas within the communities immediately surrounding the Alpine CPA. An increase in future cumulative development in these areas would require the need for additional water and would have the potential to further deplete limited groundwater supplies. In addition, cumulative development in previously undeveloped areas would increase the amount of impervious surfaces from new buildings, roadways, parking lots, and sidewalks, all of which could interfere with groundwater recharge. If future cumulative development would result in significant groundwater supply and recharge impacts, then mitigation measures would be implemented to reduce impacts to the extent feasible. However, without the guarantee of available groundwater or imported water, a cumulative groundwater impact would occur, even after mitigation has been implemented for individual projects. Therefore, cumulative impacts on groundwater supplies and recharge from future growth and development would be significant.

The proposed project would result in land use changes facilitating future high-density development in areas that are groundwater dependent. Additionally, future development in previously undeveloped areas could interfere with groundwater recharge from increased areas of impervious surfaces. As such, the proposed project would cause a similar project-level impact related to groundwater supplies and recharge compared to the prior EIRs. For the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.2 would reduce this impact but not below a level of significance given the uncertainty surrounding the availability of long-term groundwater supplies to serve future development associated with the proposed project. As such, future development allowed under the proposed project, combined with future growth and development in groundwater-dependent areas, could further deplete groundwater supplies and interfere with recharge. Therefore, the proposed project would have a **potentially significant cumulative impact** (Impact-C-HYD-2) associated with the depletion of groundwater supplies and interference with recharge.

### ***2.8.4.3 Issue 3: Result in Erosion or Siltation***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would have the potential to result in a cumulative impact related to erosion or siltation. For the Alpine CPU, a cumulative impact associated with erosion or siltation would occur if development associated with cumulative projected growth within the San Diego River WMA or San Diego Bay WMA would alter existing drainage patterns in a manner that would result in substantial erosion or siltation. Cumulative development would potentially increase impervious surfaces within the San Diego River WMA or San Diego Bay WMA, thereby increasing the amount of runoff that could result in erosion and siltation impacts. It is reasonably foreseeable that some cumulative development would occur simultaneously that, when combined, would have the potential to result in cumulative impacts associated with erosion and siltation. Therefore, cumulative erosion and siltation impacts from future growth and development would be significant.

Future development associated with the proposed project would increase relative to what was analyzed in the prior EIRs. As such, the proposed project would cause a similar project-level impact related to erosion and siltation compared to the 2011 General Plan and FCI GPA. For the reasons described above, compliance with federal, state, and local regulations addressing erosion and siltation, as well as the

implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.3 would reduce project-level impacts to less than significant. However, increases in impervious surfaces from individual projects associated with the proposed project could result in erosion and siltation that would be individually limited, but cumulatively considerable when taken into account together. As such, there is a potential that buildout of the Alpine CPU as a whole could include impervious surfaces that, when combined with cumulative growth and development, would result in erosion and siltation and a cumulatively considerable impact. Therefore, the proposed project would have a **potentially significant cumulative impact** (Impact-C-HYD-3) associated with erosion and siltation and impacts would be greater than that identified in the prior EIRs.

#### ***2.8.4.4 Issue 4: Result in Flooding***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would have the potential to result in a cumulative impact associated with flooding. For the proposed project, a cumulative impact associated with flooding would occur if development associated with cumulative projected growth within the Alpine CPA (outside of the project area) or within the San Diego River WMA or San Diego Bay WMA would convert permeable surfaces to impermeable surfaces, such as through the construction of buildings, parking lots, and roadways. Cumulative development would have the potential to alter existing drainage patterns, increase the amount of runoff, and increase flooding in the cumulative study area. Cumulative development that disturbs land would be subject to regulations reducing the potential for existing drainages to be altered in such a way that on- or off-site flooding would occur. Under the NPDES permit program, a SWPPP is prepared and BMPs are implemented for construction projects that disturb greater than 1 acre of land, which would reduce the potential for alterations in drainage to result in flooding. Similarly, existing regulations are in place to reduce the rate or amount of surface runoff during operations, including hydromodification management requirements specified in the BMP Manual. Additional existing regulations include the WPO, which requires PDPs to implement BMPs designed to retain (i.e., intercept, store, infiltrate, evaporate, and evapotranspire) on site the pollutants contained in the volume of stormwater runoff. Therefore, cumulative impacts related to flooding from future growth and development would not be significant.

The proposed project would increase allowable density within the Alpine CPA in three subareas, which could result in increased future development and impervious surfaces. As a result, the proposed project would potentially cause more severe project-level impacts related to altering the existing drainage pattern of the site or area, or increasing the rate or amount of surface runoff in a manner resulting in flooding on or off site compared to the impacts identified in the prior EIRs. For the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.4 would reduce project-level impacts to less than significant. Increases in impervious surfaces from individual development projects associated with the proposed project could result in on- or off-site flooding that would be individually limited and have the potential to be cumulatively considerable when taken into account together. Therefore, the proposed project would have a **potentially significant cumulative impact** (Impact-C-HYD-4) associated with flooding.

#### ***2.8.4.5 Issue 5: Exceed Capacity of Stormwater Systems***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would not contribute to a significant cumulative impact associated with the capacity of stormwater systems. For the Alpine CPU, a cumulative impact associated with the capacity of existing stormwater systems would occur if development associated with cumulative projected growth within the Alpine CPA (outside of the project area) would contribute substantial quantities of runoff exceeding the capacity of existing stormwater drainage

systems. Future development associated with future projected growth would increase impermeable surfaces and have the potential to contribute substantial quantities of runoff that could exceed the capacity of existing stormwater drainage systems, potentially contributing to substantial additional sources of polluted runoff. However, a cumulative project that would exceed the capacity of a stormwater system would be unlikely to contribute to a cumulative impact because the area of exposure would be limited to the immediate surrounding area. Additionally, the majority of cumulative projects would be subject to CEQA and/or NEPA review, and local regulations that require development to construct or retrofit stormwater drainage systems so that they would not cause flooding. Therefore, a significant cumulative impact would not occur.

Future development associated with the proposed project could increase relative to what was analyzed in the prior EIRs. As such, the proposed project would cause a more severe significant project-level impact on the capacity of existing stormwater systems compared to the 2011 General Plan and FCI GPA. However, for the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.5 would reduce this project-level impact to less than significant. Therefore, the proposed project's contribution to cumulative impacts associated with the capacity of existing stormwater systems would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

#### ***2.8.4.6 Issue 6: Place Housing within a 100-Year Flood Hazard Area***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would not contribute to a significant cumulative impact associated with flood hazard areas. For the Alpine CPU, a cumulative impact would occur if development associated with cumulative projected growth within the Alpine CPA (outside of the project area) or within the San Diego River WMA or San Diego Bay WMA would contribute to placing housing within a 100-year flood hazard area. However, cumulative development would be required to comply with applicable regulations, such as the National Flood Insurance Act, National Flood Insurance Reform Act, and Cobey-Alquist Floodplain Management Act, which prohibit placing housing in floodways. Therefore, given existing regulations, a cumulative impact would not occur as a result of future projected growth.

Future development associated with the proposed project could increase relative to what was analyzed in the prior EIRs, including in areas identified as a 100-year floodplain. As such, the proposed project would cause a more severe significant project-level impact related to placing housing within a 100-year flood hazard area compared to the 2011 General Plan and FCI GPA. However, for the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.6 would reduce this project-level impact to less than significant. Therefore, the proposed project's contribution to cumulative impacts associated with the placement of housing within a 100-year flood hazard area would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

#### ***2.8.4.7 Issue 7: Impede or Redirect Flood Flows***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would not have the potential to result in a cumulative impact associated with impeding or redirecting flood flows. For the Alpine CPU, a cumulative impact associated with impeding or redirecting flood flows would occur if development associated with cumulative projected growth within the Alpine CPA (outside of the project area) or within the San Diego River WMA or San Diego Bay WMA would place structures within a 100-year flood hazard area that would impede or redirect flood flows, resulting in flooding elsewhere. However, cumulative

projects would be required to comply with applicable regulations, such as the National Flood Insurance Act, National Flood Insurance Reform Act, and Cobey-Alquist Floodplain Management Act, which prohibit placing housing in floodways. Therefore, given existing regulations, a significant cumulative impact would not occur as a result of future projected growth.

Future development associated with the proposed project could increase relative to what was analyzed in the prior EIRs, including in areas identified as a 100-year floodplain. As such, the proposed project would cause a more severe significant project-level impact related to placing structures within a 100-year flood hazard area that would impede or redirect flood flows compared to the 2011 General Plan and FCI GPA. However, for the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.7 would reduce this project-level impact to less than significant. Therefore, the proposed project's contribution to cumulative impacts associated with the placement of structures within a 100-year flood hazard area that would impede or redirect flood flows would be greater than that identified in the prior EIRs; however, cumulative impacts **would not be cumulatively considerable**.

#### ***2.8.4.8 Issue 8: Expose People to Dam Inundation and Flood Hazards***

The prior EIRs concluded that the 2011 General Plan and FCI GPA would not have the potential to result in a cumulative impact associated with dam inundation and flood hazards. For the Alpine CPU, a cumulative impact associated with dam inundation and flood hazards would occur if development associated with cumulative projected growth within the Alpine CPA (outside of the project area) or within the San Diego River WMA or San Diego Bay WMA would contribute to the amount of housing or structures within dam inundation areas. However, cumulative projects would be required to comply with applicable regulations, such as the National Flood Insurance Act, National Flood Insurance Reform Act, Cobey-Alquist Floodplain Management Act, and local regulations. Therefore, given existing regulations, a significant cumulative impact would not occur as a result of future projected growth.

The proposed project would not increase development densities within dam inundation areas. Therefore, the proposed project would not result in more severe project-level impacts related to exposing people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, compared to the 2011 General Plan and FCI GPA. The proposed project's contribution to cumulative impacts associated with dam inundation and flood hazards would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

#### ***2.8.4.9 Issue 9: Expose People to Seiche, Tsunami, and Mudflow Hazards***

The prior EIRs concluded that implementation of the 2011 General Plan and FCI GPA could result in an increased risk of exposing people or structures to damage in the event of a mudflow; however, it would not contribute to a significant cumulative impact. The FCI EIR also concluded that the 2011 General Plan and FCI GPA area would not be impacted by seiche or tsunami. For the Alpine CPU, a cumulative impact associated with mudflow hazards would occur if development associated with cumulative projected growth would contribute to the number of people or structures exposed to a significant risk of loss, injury, or death involving inundation by mudflows.

Mudflows would potentially affect cumulative development, especially in surrounding communities that have been affected by extreme wildfire events in the past. However, the majority of cumulative

development would be subject to applicable regulations. Therefore, given existing regulations, a significant cumulative impact would not occur as a result of future projected growth.

Future development associated with the proposed project could increase compared to what was analyzed in the prior EIRs, including in areas susceptible to mudflow. As such, the proposed project would cause a more severe significant project-level impact related to mudflow compared to the 2011 General Plan and FCI GPA. However, for the reasons described above, compliance with existing regulations and implementation of the General Plan policies and mitigation measures noted in Section 2.8.6.8 would reduce this project-level impact to less than significant. Therefore, the proposed project's contribution to cumulative impacts associated with seiche, tsunami, and mudflow would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

## 2.8.5 Significance of Impacts Prior to Mitigation

**Impact-HYD-1: Violate Surface Water Quality Standards and Requirements during Construction Activities.** Due to increased development densities in the proposed project, construction of the proposed project would cause a more severe impact related to surface water quality standards and requirements compared to the impact identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-2: Violate Surface Water Quality Standards and Requirements during Operational Activities.** Due to increased development densities in the proposed project, operation of the proposed project would cause a more severe impact related to surface water quality standards and requirements compared to the impact identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-3: Violate Groundwater Quality Standards and Requirements during Construction Activities.** Due to increased development densities in the proposed project, construction of the proposed project would cause a more severe potentially significant impact related to groundwater quality standards and requirements compared to the impact identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-4: Violate Groundwater Quality Standards and Requirements during Operational Activities.** Due to increased development densities in the proposed project, operation of the proposed project would cause a more severe potentially significant impact related to groundwater quality standards and requirements compared to the impact identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-5: Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge.** Due to increased development densities in the proposed project, the proposed project would cause more severe potentially significant impact related to depleting groundwater supplies and interfering with recharge compared to the impact identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-6: Result in Substantial Erosion or Siltation On- or Off-Site during Construction Activities.** Due to increased development densities in the proposed project, construction of the proposed project would cause more severe impacts related to erosion or siltation on or off site compared to impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-7: Result in Substantial Erosion or Siltation On- or Off-Site during Operational Activities.** Due to increased development densities in the proposed project, operation of the proposed

project would cause more severe impacts related to erosion or siltation on or off site compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-8: Result in Flooding On- or Off-Site during Construction Activities.** Due to increased development densities in the proposed project, construction of the proposed project would cause more severe potentially significant impacts related to flooding on or off site compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-9: Result in Flooding On- or Off-Site during Operational Activities.** Due to increased development in the proposed project, operation of the proposed project would cause more severe potentially significant impacts related to flooding on or off site compared to the impacts identified in the prior EIRs. This would be considered a significant impact.

**Impact-HYD-10: Exceed Capacity of Existing Stormwater Drainage Facilities.** Due to increased development densities in the proposed project, the proposed project would cause more severe impacts related to exceeding existing stormwater drainage facilities compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-11: Place Housing Within a 100-Year Flood Hazard Area.** Due to increased development densities in the proposed project, the proposed project would cause more severe potentially significant impacts related to placing housing within a 100-year flood hazard area compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-12: Impede or Redirect Flood Flows.** Due to increased development densities in the proposed project, the proposed project would cause more severe potentially significant impacts related to impeding or redirecting flood flows compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-HYD-13: Expose People to Inundation by Mudflow.** Due to increased development densities in the proposed project, the proposed project would cause more severe potentially significant impacts related to inundation by mudflow compared to the impacts identified in the prior EIRs. This would be considered a significant impact prior to mitigation.

**Impact-C-HYD-1: Result in a Cumulatively Considerable Contribution to Violating Water Quality Standards and Requirements.** The proposed project would cause a similar impact related to violating water quality standards and requirements compared to the impact identified in the prior EIRs. Therefore, the proposed project's contribution to this impact would be cumulatively considerable.

**Impact-C-HYD-2: Result in a Cumulatively Considerable Contribution to Substantially Depleting Groundwater Supplies or Interfering Substantially with Groundwater Recharge.** The proposed project would cause a similar impact related to depleting groundwater supplies and interfering with groundwater recharge compared to the impacts identified in the prior EIRs. Therefore, the proposed project's contribution to this impact would be cumulatively considerable.

**Impact-C-HYD-3: Result in a Cumulatively Considerable Contribution to Erosion or Siltation.** Increases in impervious surfaces from individual projects associated with the proposed project could result in erosion and siltation that would be individually limited, but cumulatively considerable when taken into account together. As such, there is a potential that buildout of the proposed project as a whole could include impervious surfaces that, when combined with cumulative growth and development, would result in erosion and siltation and a cumulatively considerable impact. Consequently, the proposed project's contribution to cumulative impacts associated with erosion and siltation would be more severe



than that identified in the prior EIRs. Therefore, the proposed project's contribution to this impact would be cumulatively considerable.

**Impact-C-HYD-4: Result in a Cumulatively Considerable Contribution to On- or Offsite Flooding.**

Increases in impervious surfaces from individual projects associated with the proposed project could result in on- or off-site flooding that would be individually limited, and cumulatively considerable when taken into account together. There is a potential that buildout of the proposed project could include impervious surfaces that, when combined with cumulative growth and development, would result in on- or off-site flooding and a cumulatively considerable impact. Therefore, the proposed project's contribution to this impact would be cumulatively considerable.

## **2.8.6 Mitigation**

### ***2.8.6.1 Issue 1: Violate Water Quality Standards and Requirements***

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-1 and Impact-HYD-2, and Impact-HYD-3 related to water quality to **less than significant**.

Implementation of FCI EIR mitigation measures in combination with existing regulations and applicable General Plan policies would reduce Impact-HYD-4 and Impact-C-HYD-1, but not to a level below significance; therefore, those impacts would remain **significant and unavoidable**.

#### ***Infeasible Mitigation Measures***

The following measures were considered in attempting to reduce impacts associated with hydrology to below a level of significance. However, the County has determined that these measures would be infeasible and therefore these mitigation measures would not be implemented.

- Provide a water treatment system that reduces constituents to below the maximum contamination levels in all groundwater impaired areas.

Explanation: This measure would require treatment plants in many areas of the County, which would potentially result in numerous environmental impacts and conflict with the project objective to minimize public costs and infrastructure.

- In groundwater quality impaired areas, require water to be imported from other sources.

Explanation: This measure would not be feasible based on the existing lack of infrastructure needed to import water to impaired areas. To provide such infrastructure would conflict with the project objectives to minimize public costs of infrastructure and services and correlate their timing with new development.

- In groundwater quality impaired areas, place a moratorium on building permits and development applications.

Explanation: This measure would be inconsistent with the land use designations proposed for the project. It would also conflict with goals of the Housing Element to provide sufficient housing stock and would not achieve one of the primary objectives of the Proposed Project, which is to accommodate a reasonable amount of growth.

### *2011 General Plan and FCI EIR Mitigation Measures*

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-1.2 through Hyd-1.10 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts to water quality.

### *Alpine CPU Mitigation Measures*

No additional mitigation measures have been identified specific to the Alpine Community Plan Area.

### **2.8.6.2 Issue 2: Deplete Groundwater Supplies and Interfere with Recharge**

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-5 and Impact-C-HYD-2 related to groundwater resources, but not to a level below significant; therefore, the impacts would remain **significant and unavoidable**.

### *Infeasible Mitigation Measures*

The County has determined the following measures to be infeasible and therefore these measures would not be implemented.

- In areas with potentially impacted groundwater supplies, require all proposed discretionary projects to share well water through a well sharing agreement.

Explanation: This mitigation measure would prove to be infeasible or unenforceable, because such agreements would only apply to current landowners and would not be binding on future owners of the affected properties.

- In areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with other groundwater providers to import water through the construction of new infrastructure from another groundwater basin that is not impacted, prior to the issuance of discretionary permits.

Explanation: This mitigation measure is considered infeasible because piping in groundwater from an off-site source would be a complex and costly process, which would involve any number of issues, including (1) water rights issues; (2) need to obtain proper permits to encroach on public roadways or other private properties to convey the water; (3) potential need to create a new water district/water company; and (4) accelerated deterioration of the groundwater basin that is providing the imported water. Additionally, requiring complex piping to import groundwater from an alternative location has the potential to result in multiple secondary environmental impacts, including cultural resources, biological resources, and hydrology/water quality. Although some water districts within the unincorporated County have imported water from another groundwater basin in the past, requiring that all development obtain water contracts, as described above, would put an undue burden on both the developer and water district/company. Implementing this mitigation measure would also contradict the General Plan objective to promote environmental stewardship that protects the range of natural resources and habitats that uniquely define the County character and ecological importance, because it would

result in multiple secondary environmental impacts to both unincorporated County groundwater and surface resources. In addition, this solution may not be sustainable for all projects in the long term. Implementation of this mitigation measure would also conflict with the project objective to minimize costs of infrastructure and services because this mitigation measure would require extensive infrastructure costs to implement. Therefore, for the reasons listed above, this measure is considered infeasible.

- In groundwater-dependent areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with other water providers to truck in water from local water districts or other sources such as an off-site well, prior to the issuance of discretionary permits.

Explanation: This mitigation measure is considered infeasible because trucked water is not a guaranteed, sustainable, long-term source of water, since a water district can rescind or preclude the selling of trucked water in times of drought and limited water supplies. Additionally, implementation of this mitigation measure would conflict with the project objective to maintain environmentally sustainable communities and reduce greenhouse gas emissions that contribute to climate change, because it would require extensive vehicle travel and is not a sustainable solution. Therefore, this would not be a feasible mitigation measure.

- In groundwater-dependent areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with a SDCWA member agency in order to import water from SDCWA facilities.

Explanation: This mitigation measure is considered infeasible due to the lack of infrastructure in place to convey the water, the limited availability of water within the desert southwest, the cost of providing these services, and the discretionary approval to extend the SDCWA boundary, which is outside of the County's jurisdiction. Implementation of this mitigation measure would also conflict with the project objective to minimize costs of infrastructure and services, because the implementation of this mitigation measure would result in extensive infrastructure costs.

- Implement a Countywide moratorium on building permits and development applications in any areas of the County that would have the potential to adversely impact groundwater supplies and recharge.

Explanation: This would effectively result in no new impacts to groundwater supplies and recharge within the unincorporated County. However, this measure would impede the County's ability to implement the General Plan Update because it would prohibit future development in areas identified for increased growth within the General Plan. This mitigation measure would also conflict with the project objective to support a reasonable share of projected regional population growth. Therefore, for the reasons listed above, this mitigation measure would not be implemented.

### ***2011 General Plan and FCI EIR Mitigation Measures***

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-2.1, Hyd-2.2, Hyd-2.4, and Hyd-2.5 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts on groundwater supplies. Prior EIR mitigation measures **Hyd-1.2** through **Hyd-1.5** would also reduce impacts, but not to a level below significant.

### *Alpine CPU Mitigation Measures*

No additional mitigation measures have been identified specific to the Alpine CPA.

#### **2.8.6.3 Issue 3: Result in Erosion or Siltation**

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-6, Impact-HYD-7, and Impact-C-HYD-3 related to erosion and siltation, to **less than significant**.

#### *2011 General Plan and FCI EIR Mitigation Measure*

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-3.1 through Hyd-3.3 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts related to erosion.

Prior EIR mitigation measures Hyd-1.2, Hyd-1.3, and Hyd-1.5 would also further reduce direct and cumulative impacts to a level below significant.

### *Alpine CPU Mitigation Measures*

No additional mitigation measures have been identified specific to the Alpine CPA.

#### **2.8.6.4 Issue 4: Result in Flooding**

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-8, Impact-HYD-9, and Impact-C-HYD-4 related to flooding, to **less than significant**. !!

#### *2011 General Plan and FCI EIR Mitigation Measures*

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-4.1 through Hyd-4.3 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts related to flooding.

Prior EIR mitigation measures Hyd-4.1 and 4.2, mitigation measures Hyd-1.2 through Hyd-1.5 and Hyd-2.5 would also reduce direct impacts to a level below significant.

### *Alpine CPU Mitigation Measures*

No additional mitigation measures have been identified specific to the Alpine CPA.

#### **2.8.6.5 Issue 5: Exceed Capacity of Storm Water Systems**

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs mitigation measures would reduce Impact-HYD-10 related to exceeding capacity of stormwater systems, to **less than significant**.

### ***2011 General Plan and FCI EIR Mitigation Measures***

Mitigation measures Hyd-1.2 through Hyd-1.5, Hyd-2.5, Hyd-3.1, and Hyd-4.1 through Hyd-4.3 would further reduce impacts to a level below significant.

### ***Alpine CPU Mitigation Measures***

No additional mitigation measures have been identified specific to the Alpine CPA.

### ***2.8.6.6 Issue 6: Place Housing within a 100-year Flood Hazard Area***

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-11 related to placing housing within a 100-year flood hazard area, to **less than significant**.

### ***2011 General Plan and FCI EIR Mitigation Measures***

The following prior EIRs mitigation measure is being carried forward and shall apply to the proposed project: Hyd-6.1 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of this mitigation measure would reduce the proposed project's impacts related to placing housing within a 100-year flood hazard area. Prior EIR mitigation measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1, and Hyd-4.2 would reduce impacts to a level below significant.

### ***Alpine CPU Mitigation Measures***

No additional mitigation measures have been identified specific to the Alpine CPA.

### ***2.8.6.7 Issue 7: Impede or Redirect Flood Flows***

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce (Impact-HYD-12) impacts related to impeding or redirecting flood flows, to **less than significant**.

### ***2011 General Plan and FCI EIR Mitigation Measures***

Mitigation measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1 through Hyd-4.3, and Hyd-6.1 would reduce impacts to a level below significant.

### ***Alpine CPU Mitigation Measures***

No additional mitigation measures have been identified specific to the Alpine CPA.

### ***2.8.6.8 Issue 8: Expose People to Dam Inundation and Flood Hazards***

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. The proposed project would not result in any new or more severe impacts that would expose people to dam inundation and flood hazards compared to the impacts identified in the prior EIRs. The proposed

project's impacts related to exposing people to dam inundation and flood hazards would be **less than significant**. Therefore, no additional mitigation measures would be required.

### ***2011 General Plan and FCI EIR Mitigation Measures***

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-8.1 and Hyd-8.2 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts related to exposure of people to dam inundation and flood hazards.

Prior EIRs mitigation measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1 through Hyd-4.3, and Hyd-6.1 would also reduce impacts to less than significant.

### ***Alpine CPU Mitigation Measures***

No additional mitigation measures have been identified specific to the Alpine CPA.

## ***2.8.6.9 Issue 9: Expose People to Seiche, Tsunami, and Mudflow Hazards***

As discretionary projects are submitted, CEQA review would be completed, which may require a formal study that would analyze impacts and identify project-specific mitigation measures to reduce impacts. In addition, the following prior EIRs and Alpine CPU specific mitigation measures would reduce Impact-HYD-13 related to exposure of people to seiche, tsunami, and mudflow hazards, to **less than significant**.

### ***2011 General Plan and FCI EIR Mitigation Measures***

The following prior EIRs mitigation measures are being carried forward and shall apply to the proposed project: Hyd-3.1 through Hyd-3.3 (see Appendix B, General Plan EIR Mitigation Measures). Implementation of these mitigation measures would reduce the proposed project's impacts related to exposure of people to seiche, tsunami, and mudflow hazards.

### ***Alpine CPU Mitigation Measures***

No additional mitigation measures have been identified specific to the Alpine CPA.

## **2.8.7 Conclusion**

### ***2.8.7.1 Issue 1: Violate Water Quality Standards and Requirements***

Implementation of the proposed project would increase development density and population compared to the development allowed under the current General Plan. The proposed density and population increase would contribute to surface water quality contaminants during construction (Impact-HYD-1) and operation (Impact-HYD-2) resulting in a potentially significant direct impact on surface water quality standards and requirements. The proposed project would contribute to groundwater quality contaminants during construction (Impact-HYD-3) and during operation (Impact-HYD-4), resulting in a potentially significant direct impact on groundwater quality standards and requirements. Additionally, the proposed project would result in a cumulatively considerable contribution to a significant cumulative impact associated with groundwater quality standards and requirements (Impact-C-HYD-1).

Future development projects would be required to comply with the County's JRMP, BMP Manual and WPO, and permanent BMPs (source control, site design, and structural) that would reduce the discharge of

pollutants that could impact surface waters. Several General Plan policies address water quality; these policies include COS-4.2, COS-4.3, COS-5.2, COS-5.3, COS-5.5, LU-6.5, LU-6.9, and LU-14.2 through LU-14.4. Compliance with existing regulations, applicable General Plan policies, and prior EIRs mitigation measures Hyd-1.2 through Hyd-1.10 would reduce impacts on surface water quality standards and requirements to less than significant. However, the proposed project's impacts associated with operation groundwater quality would not be mitigated to below a level of significance and would remain significant and unavoidable. Therefore, Impact-HYD-4 and Impact-C-HYD-1 associated with groundwater quality would be **significant and unavoidable**.

### ***2.8.7.2 Issue 2: Deplete Groundwater Supplies and Interfere with Recharge***

Implementation of the proposed project would increase development density and population in three subareas, compared to the development allowable under the current General Plan. Therefore, this would be considered a significant impact of the proposed project (Impact-HYD-5). Also, the proposed project's contribution to cumulative impacts associated with groundwater supplies and recharge would be greater than that identified in the prior EIRs and would be **cumulatively considerable** (Impact-C-HYD-2).

Future development projects within the Alpine CPA would be required to comply with applicable regulations, including the County's Groundwater Ordinance. Several General Plan policies address groundwater supplies and recharge; these policies include COS-4.1, COS-5.2, LU-8.1, LU-8.2, LU-13.1, and LU-13.2. Compliance with existing regulations, applicable General Plan policies, and prior EIRs mitigation measures Hyd-2.1, Hyd-2.2, Hyd-2.4, and Hyd-2.5 would reduce the project-level impact, but not to a level below significant. Therefore, Impact-HYD-5 and Impact-C-HYD-2 associated with groundwater supplies and recharge would be **significant and unavoidable**.

### ***2.8.7.3 Issue 3: Result in Erosion or Siltation***

Implementation of the Alpine CPU would increase development density compared to the development allowable under the General Plan. The proposed density increase would have the potential to result in increased runoff that has the potential to cause new erosion or worsen existing erosion problems. Therefore, the construction and operation of the proposed project would be considered significant impacts of the proposed project (Impact-HYD-6 and Impact-HYD-7).

Additionally, there is a potential that buildout of the Alpine CPU could include impervious surfaces that, when combined with cumulative growth and development, would result in erosion and siltation and a significant cumulative impact. Therefore, the proposed project's contribution to cumulative impacts associated with erosion and siltation would be greater than that identified in the 2011 General Plan EIR but would be consistent with the overall impact identified in the FCI EIR (Impact-C-HYD-3).

Future development projects within the Alpine CPA would be required to comply with applicable regulations, including the JRMP; LID standards; Grading, Clearing and Watercourses Ordinance; and the RPO. Several General Plan policies address groundwater supplies and recharge; these policies include COS-5.3, LU-6.5, and LU-6.9. Compliance with existing regulations; applicable General Plan policies; and prior EIRs mitigation measures Hyd-1.2, Hyd-1.3, Hyd-1.5, Hyd-3.1, Hyd-3.2, and Hyd-3.3 would further reduce the proposed project's direct and cumulative impacts associated with erosion and siltation to below a level of significance. Therefore, Impact-HYD-6, Impact-HYD-7, and Impact-C-HYD-3 would be reduced to **less than significant**.

#### ***2.8.7.4 Issue 4: Result in Flooding***

Implementation of the proposed project would increase development density compared to the current General Plan. Construction and operation of future development associated with implementation of the proposed project would convert more permeable surfaces to impermeable surfaces compared to the current General Plan, potentially creating more severe impacts associated with flooding on or off site. Therefore, the proposed project would result in potential significant impacts during construction (Impact-HYD-8) and operation (Impact-HYD-9). Additionally, there is a potential that buildout of the Alpine CPU as a whole would result in impervious surfaces that, when combined with cumulative growth and development, would result in on- or off-site flooding and a cumulatively considerable impact (Impact-C-HYD-4).

Future development projects within the Alpine CPA would be required to comply with applicable regulations, including the WPO, BMP Manual, and RPO. Several General Plan policies address flooding; these policies include LU-6.5, LU-6.10, S-9.2, S-10.2, S-10.3, S-10.4, and S-10.6. Compliance with existing regulations; applicable General Plan policies; and prior EIRs mitigation measures Hyd-1.2 through Hyd-1.5, Hyd-2.5, Hyd-4.1, Hyd-4.2, and Hyd-4.3 would reduce the proposed project's direct and cumulative impacts associated with flooding potential to below a level of significance. Therefore, Impact-HYD-8, Impact-HYD-9, and Impact-C-HYD-4 would be reduced to **less than significant and would not be cumulatively considerable**.

#### ***2.8.7.5 Issue 5: Exceed Capacity of Stormwater Systems***

Implementation of the proposed project would increase development density compared to the current General Plan. Future development associated with implementation of the proposed project could exceed the capacity of existing stormwater drainage facilities. However, with implementation of regulations, this impact would be similar to the prior EIRs (Impact-HYD-10). The proposed project's contribution to cumulative impacts associated with exceeding the capacity of stormwater systems would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

Future development projects within the Alpine CPA would be required to comply with applicable regulations, including the WPO. Several General Plan policies address flooding; these policies include COS-4.2 through COS-4.4, COS-5.2, COS-5.3, COS-5.5, LU-6.5, LU-6.9, LU-6-10, LU-14.2, LU-14.4, S-9.2, and S-10.2 through S-10.6. Compliance with existing regulations; applicable General Plan policies; and prior EIRs mitigation measures Hyd-1.2 through Hyd-1.5, Hyd-2.5, Hyd-3.1, Hyd-4.1, Hyd-4.2, and Hyd-4.3 would further reduce the proposed project's direct impact associated with stormwater systems capacity potential to below a level of significance. Therefore, Impact-HYD-10 would be reduced to **less than significant**.

#### ***2.8.7.6 Issue 6: Place Housing within a 100-year Flood Hazard Area***

Implementation of the proposed project would increase development density compared to the current General Plan. Future development associated with implementation of the proposed project could place housing within a 100-year flood hazard area. Therefore, this would be considered a significant impact of the proposed project (Impact-HYD-11). The proposed project's contribution to cumulative impacts associated with placing housing within a 100-year flood hazard area would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

Future development projects within the Alpine CPA would be required to comply with applicable regulations. Several General Plan policies address placing housing within a 100-year flood hazard area;



these policies include COS-5.1, LU-6-12, S-9.1 through S-9.5, and S-10.1. Compliance with existing regulations; applicable General Plan policies; and prior EIRs mitigation measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1, Hyd-4.2, and Hyd-6.1 would reduce the proposed project's impact associated with placement of housing within a 100-year flood hazard area to below a level of significance. Therefore, Impact-HYD-11 would be reduced to **less than significant**.

### ***2.8.7.7 Issue 7: Impede or Redirect Flood Flows***

Implementation of the proposed project would increase development density compared to the current General Plan. Future development associated with implementation of the proposed project could impede or redirect flood flows. Therefore, this would be considered a significant impact of the proposed project (Impact-HYD-12). The proposed project's contribution to cumulative impacts associated with impeding or redirecting flood flows would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

Future development projects within the Alpine CPA would be required to comply with applicable regulations. Several General Plan policies address impeding or redirecting flood flows; these policies include COS-5.1, LU-6-16, S-9.1 through S-9.5, and S-10.1. Compliance with existing regulations; applicable General Plan policies; and prior EIRs mitigation measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1, Hyd-4.2, Hyd-4.3, and Hyd-6.1 would reduce the proposed project's impact associated with redirecting or impeding or redirecting flood flows to below a level of significance. Therefore, Impact-HYD-12 would be reduced to **less than significant**.

### ***2.8.7.8 Issue 8: Expose People to Dam Inundation and Flood Hazards***

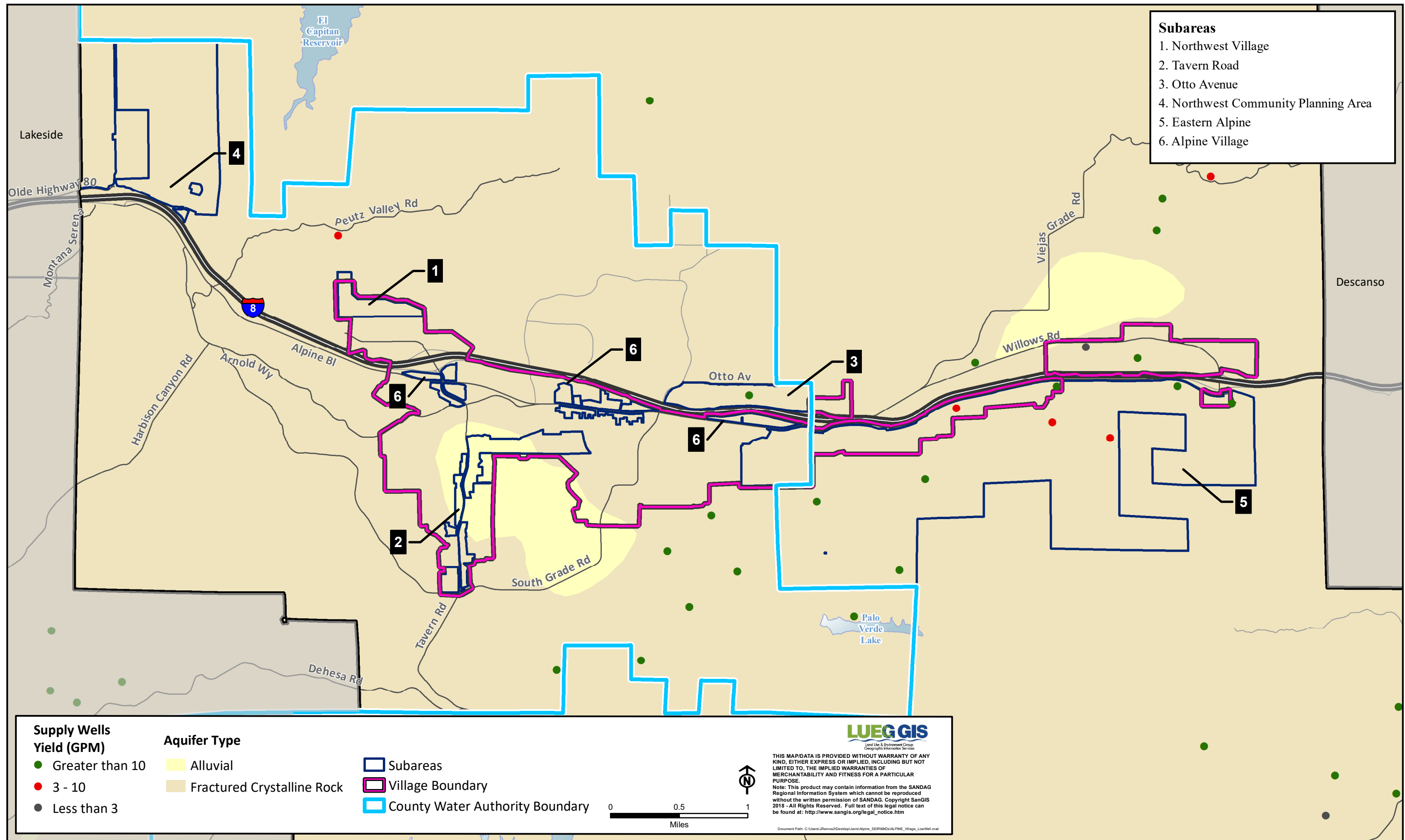
Implementation of the proposed project would increase development density and population compared to the current General Plan, but not within a dam inundation zone. Future development associated with implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, as a result of the failure of a levee or dam. Therefore, direct impacts are **less than significant**. Also, the proposed project's contribution to cumulative impacts associated with dam inundation and flood hazards would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

### ***2.8.7.9 Issue 9: Expose People to Seiche, Tsunami, and Mudflow Hazards***

Implementation of the proposed project would increase development density and population anticipated compared to the current General Plan. The Alpine CPA would not be subject to seiche or tsunami; however, future development associated with implementation of the proposed project could expose people or structures to a significant risk of loss, injury, or death involving inundation mudflow. Therefore, this would be considered a more severe significant impact of the proposed project (Impact-HYD-13). The proposed project's contribution to cumulative impacts associated with seiche, tsunami, or mudflow hazards would be similar to that identified in the prior EIRs and **would not be cumulatively considerable**.

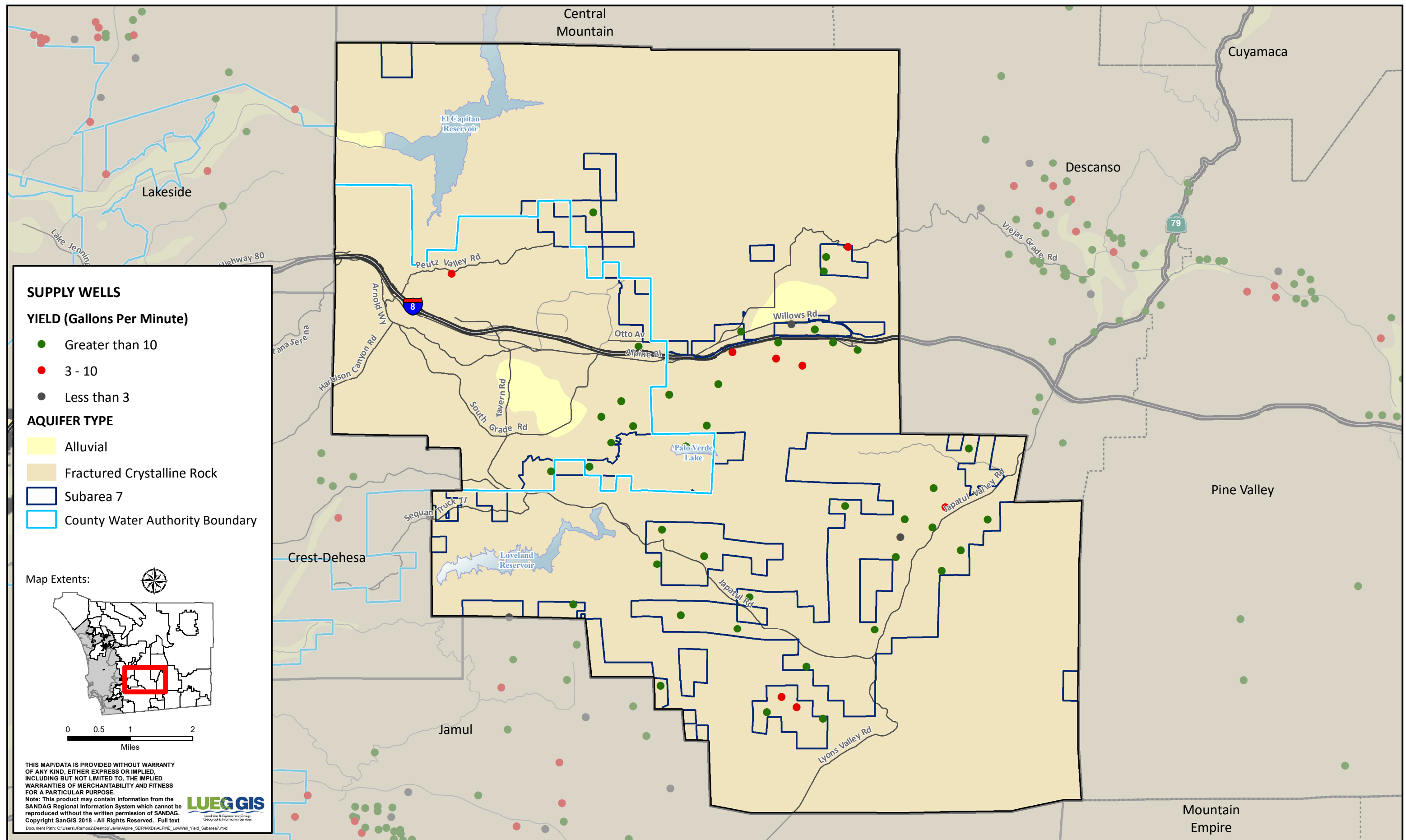
Future development projects within the Alpine CPA would be required to comply with applicable regulations. Several General Plan policies address mudflows; these policies include COS-5.1, S-8.1, S-8.2, S-9.3, and S-9.6. Compliance with existing regulations; applicable General Plan policies; and prior EIRs

mitigation measures Hyd-3.1, Hyd-3.2, and Hyd-3.3 would reduce the proposed project's impact associated with inundation by mudflows to below a level of significance. Therefore, Impact-HYD-13 would be reduced to **less than significant**.



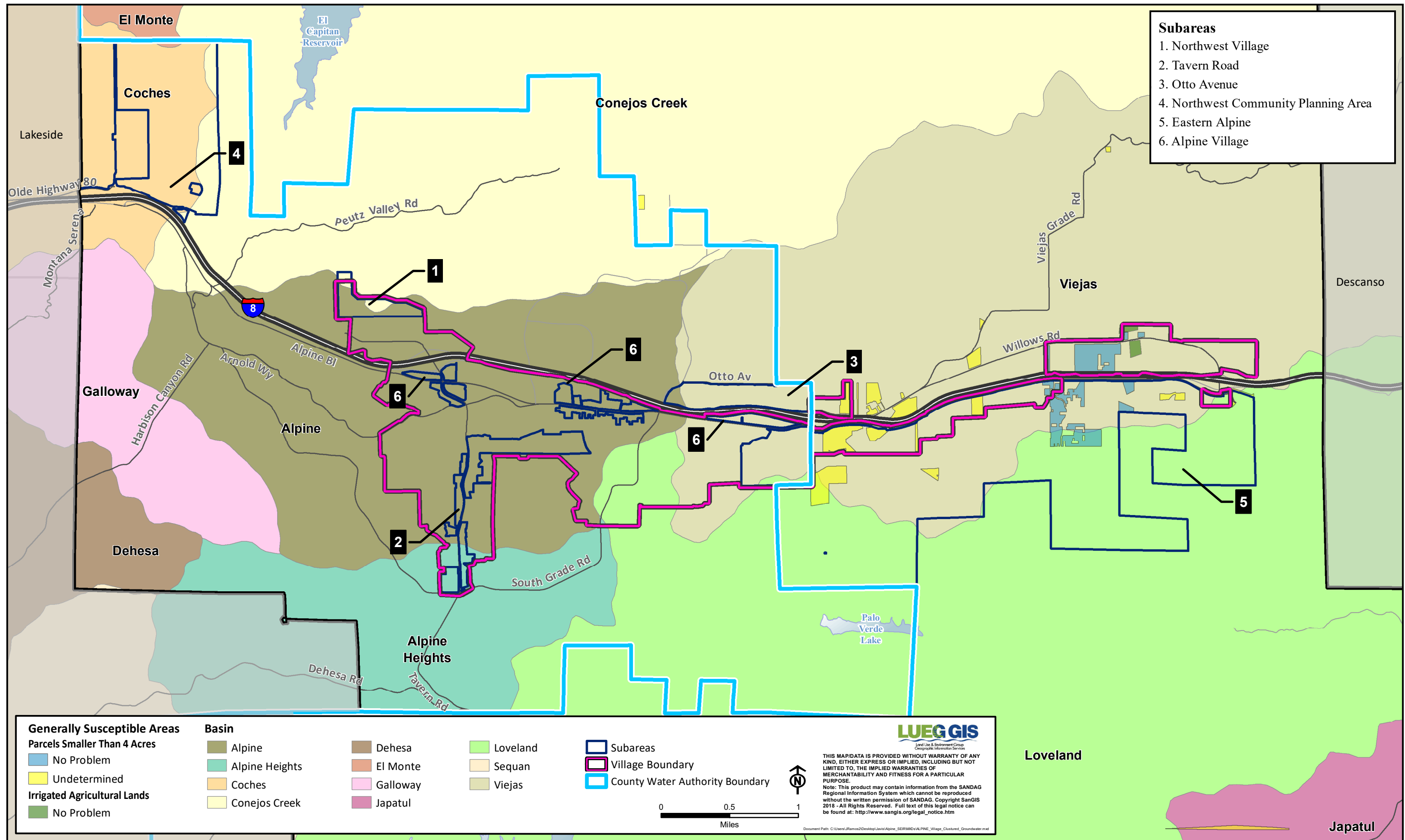
Source: SanGIS, County of San Diego, 2019

**Figure 2.8-1a**  
**Aquifer Type and Potential Low Well Yield Map**  
**Subareas 1-6**



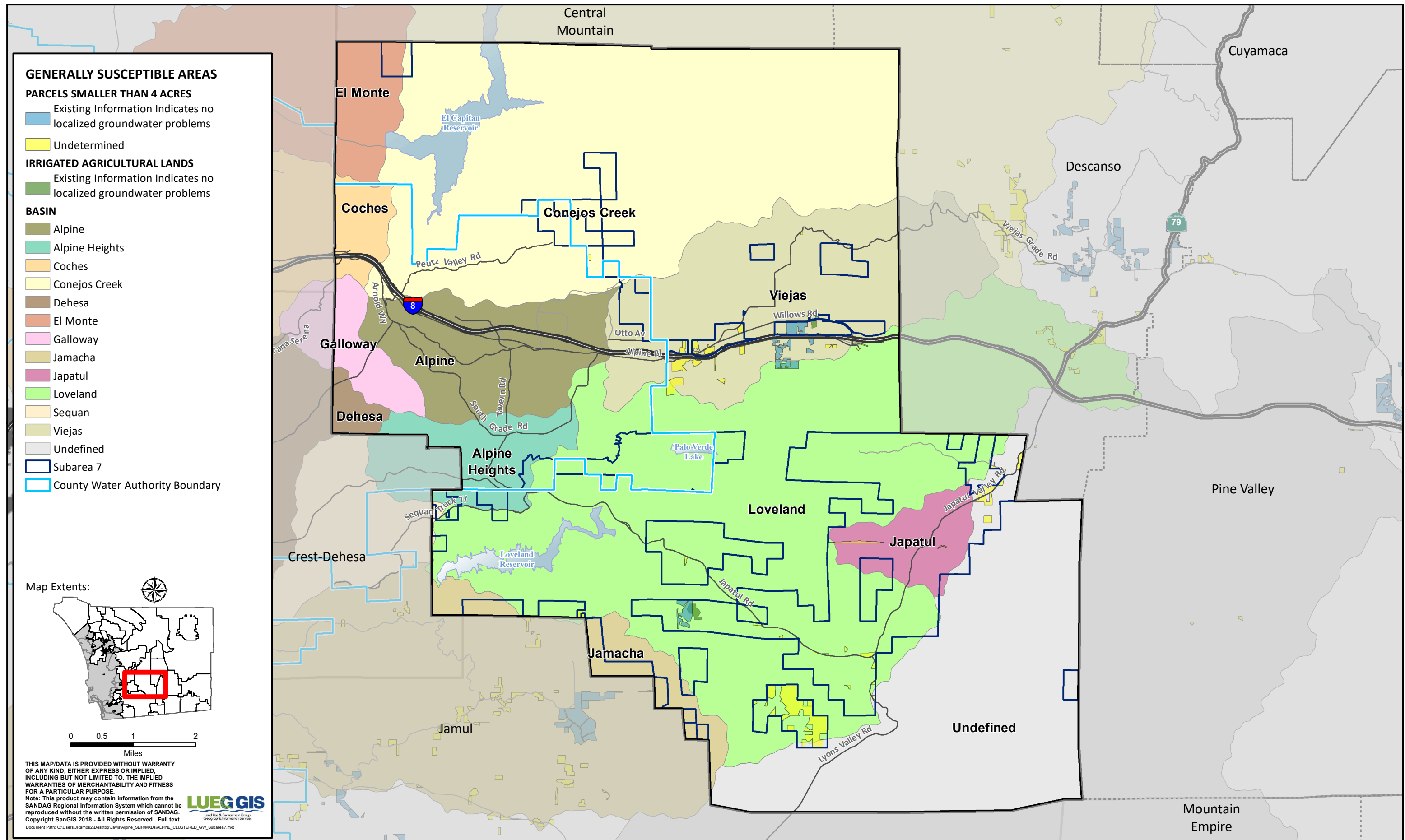
Source: SanGIS, County of San Diego, 2020

**Figure 2.8-1b**  
**Aquifer Type and Potential Low Well Yield Map**  
**Subarea 7**



Source: SanGIS, County of San Diego, 2019

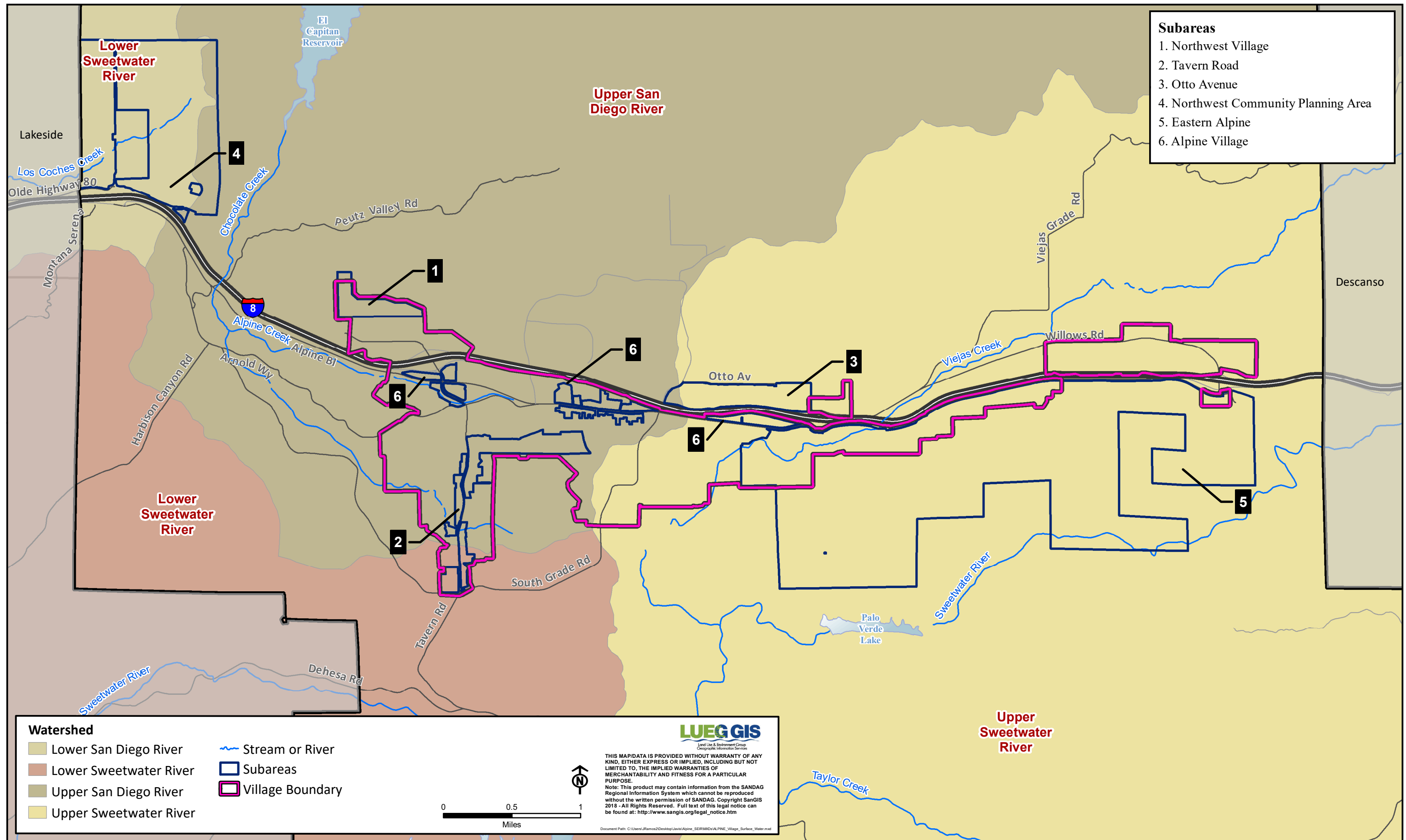
**Figure 2.8-2a**  
**Potential Impacts from Large Quantity**  
**/Clustered Groundwater Users**  
**Subareas 1-6**



Source: SanGIS, County of San Diego, 2020

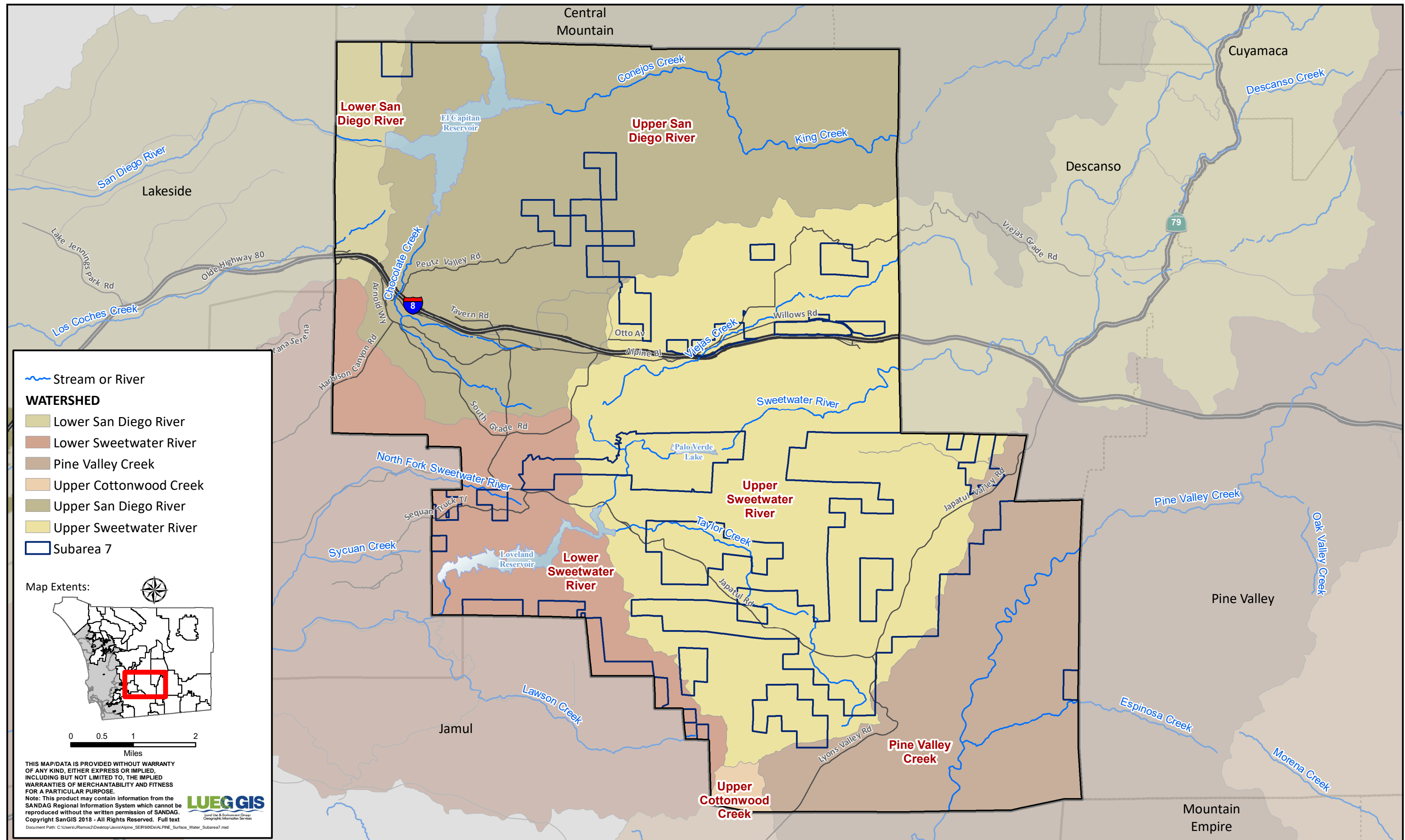
**Figure 2.8-2b**  
**Potential Impacts from Large Quantity**  
**/Clustered Groundwater Users**  
**Subarea 7**





Source: SanGIS, County of San Diego, 2019

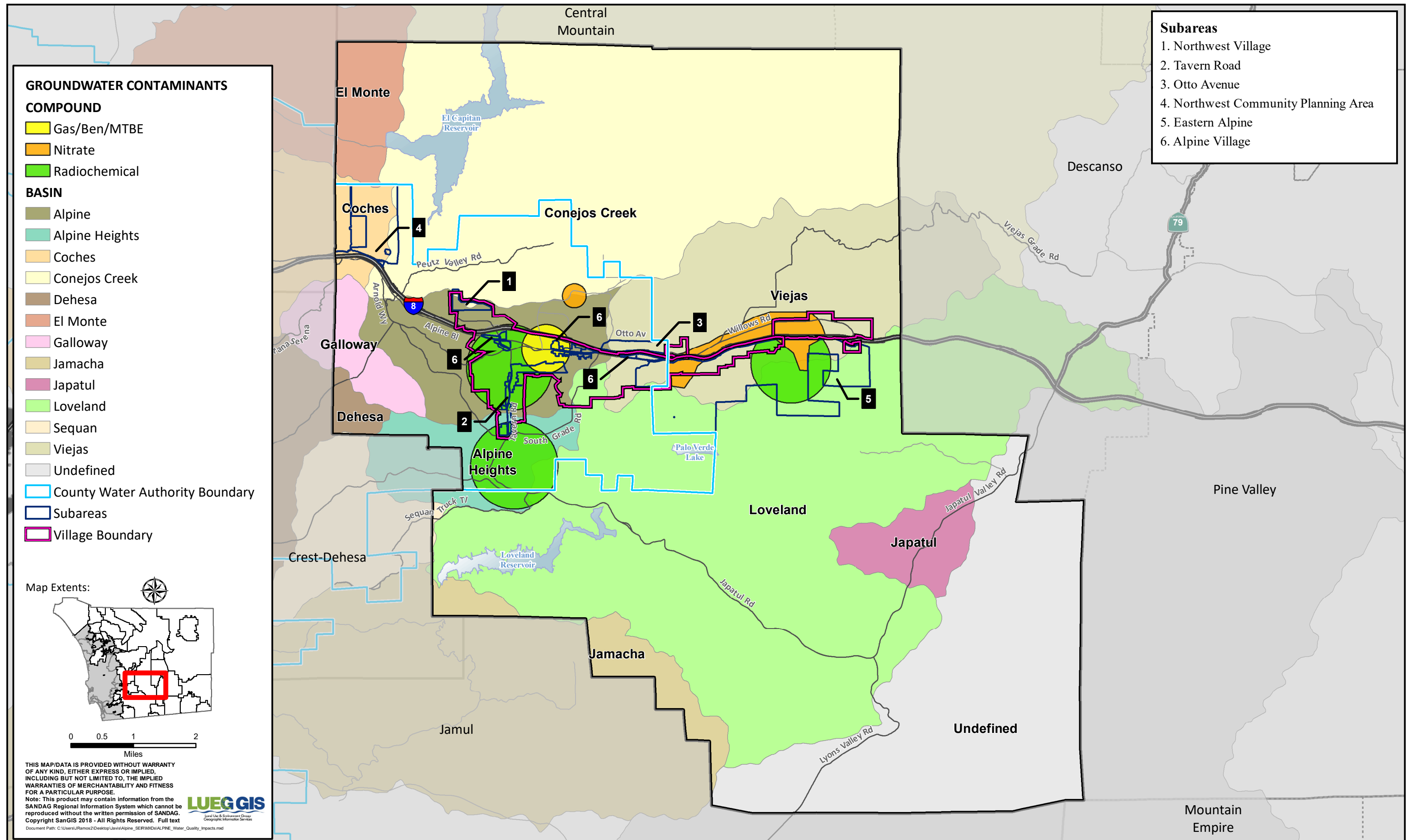
Figure 2.8-3a  
Surface Water  
Subareas 1-6



Source: SanGIS, County of San Diego, 2020

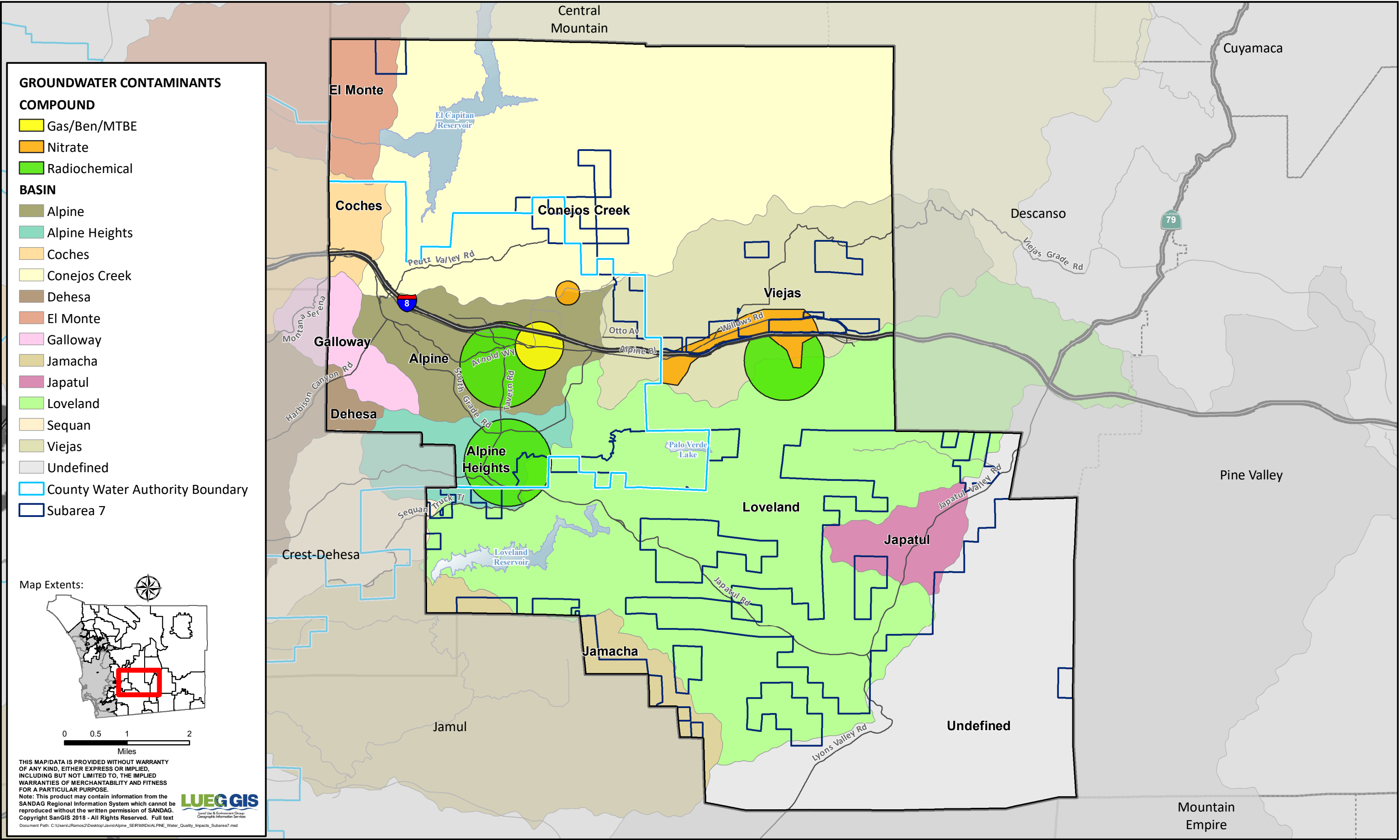
**Figure 2.8-3b**  
**Surface Water**  
**Subarea 7**





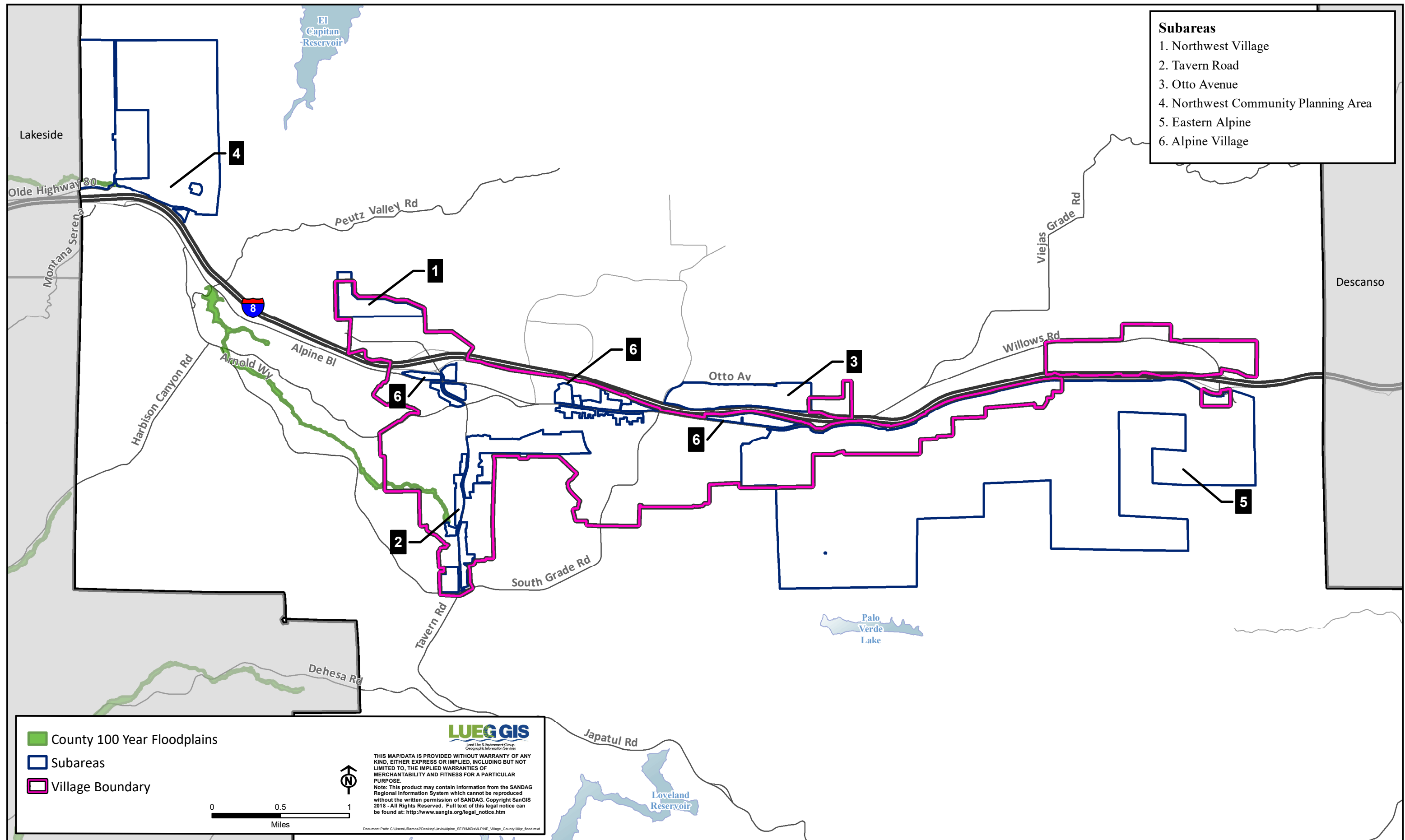
Source: SanGIS, County of San Diego, 2019

**Figure 2.8-4a**  
**Groundwater Impacts**  
**Subareas 1-6**



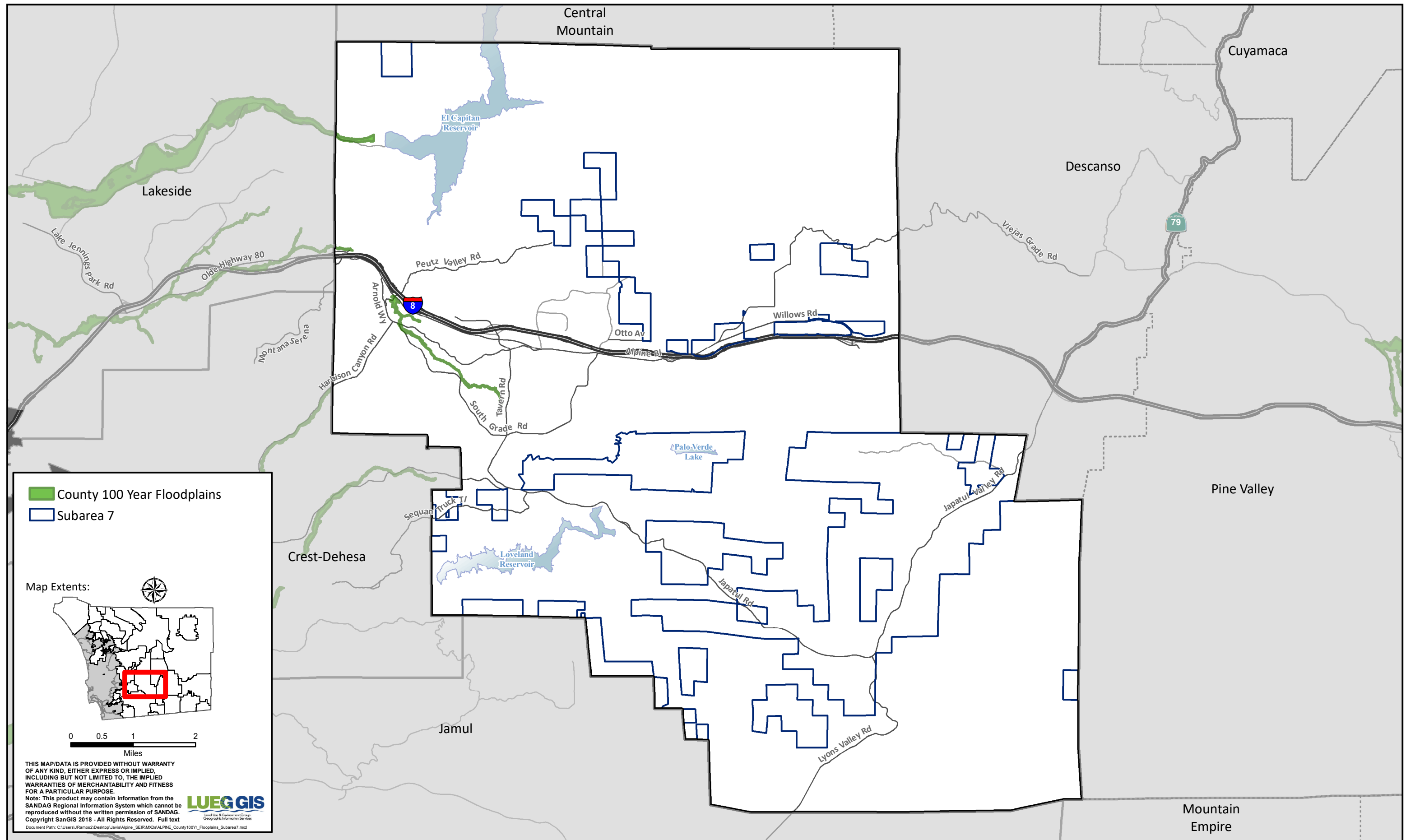
Source: SanGIS, County of San Diego, 2020

Figure 2.8-4b  
Groundwater Impacts  
Subarea 7



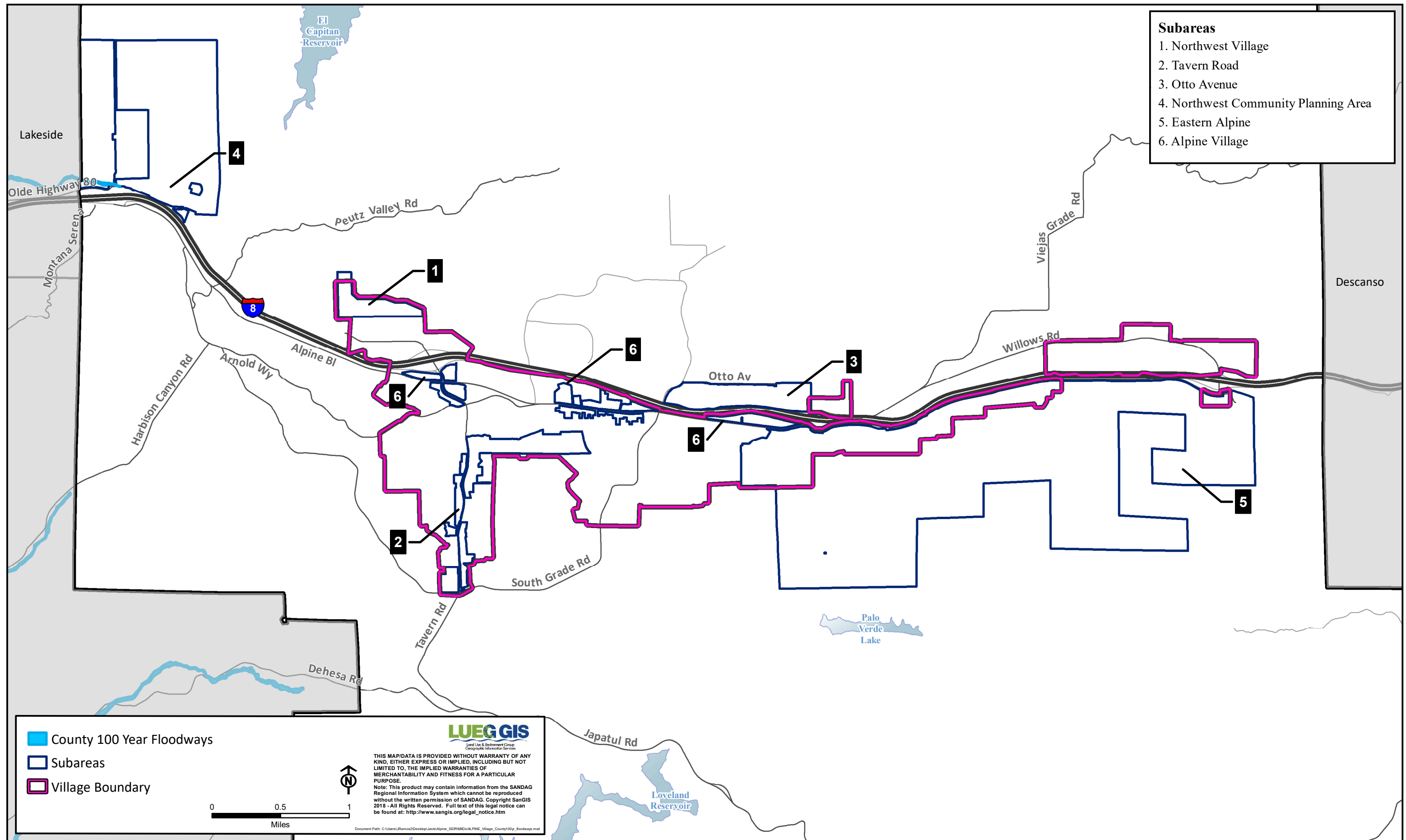
Source: SanGIS, County of San Diego, 2020

**Figure 2.8-5a**  
**County 100 Year Floodplains**  
**Subareas 1-6**



Source: SanGIS, County of San Diego, 2020

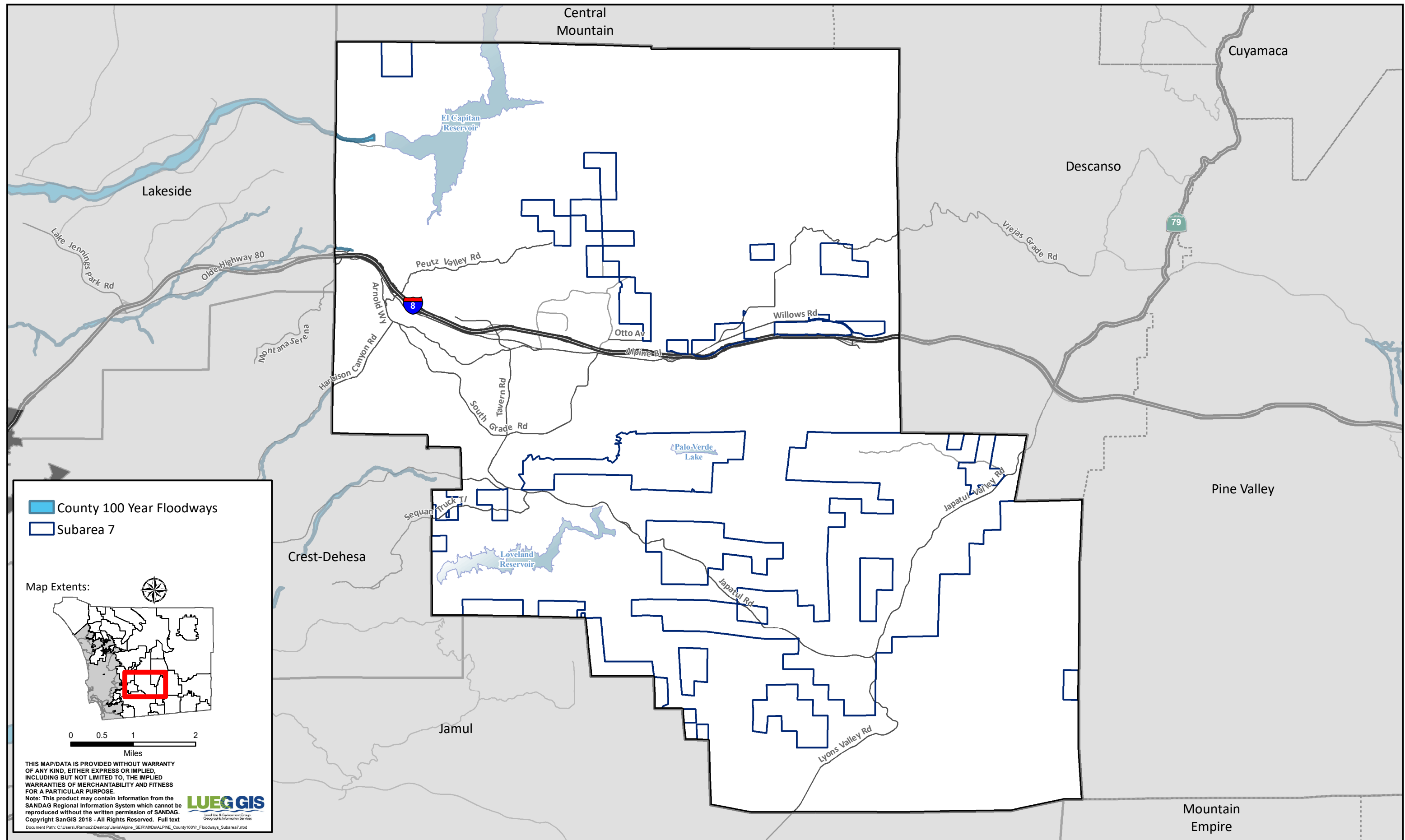
**Figure 2.8-5b**  
**County 100 Year Floodplains**  
**Subarea 7**



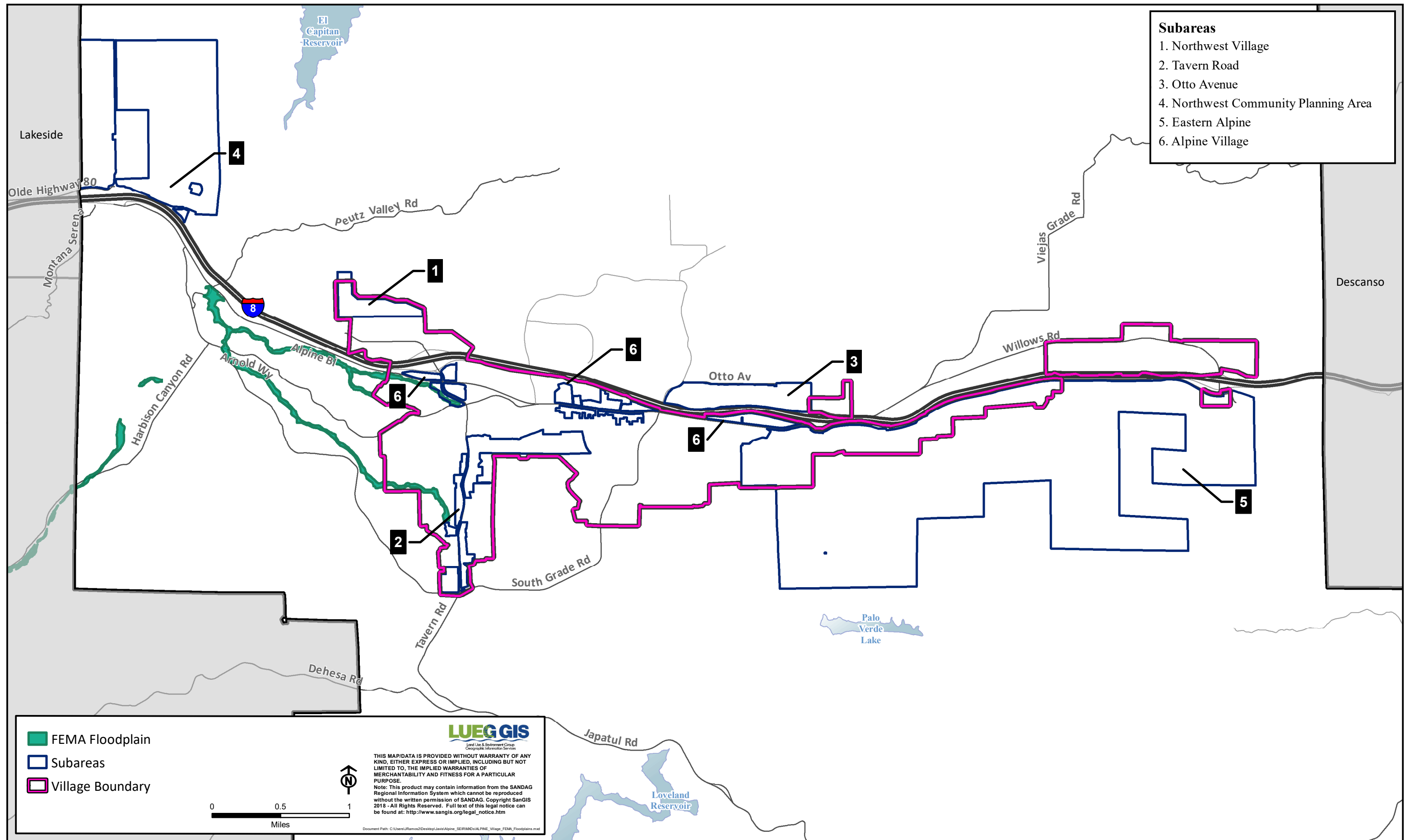
Source: SanGIS, County of San Diego, 2020

**Figure 2.8-6a**  
**County 100 Year Floodways**  
**Subareas 1-6**



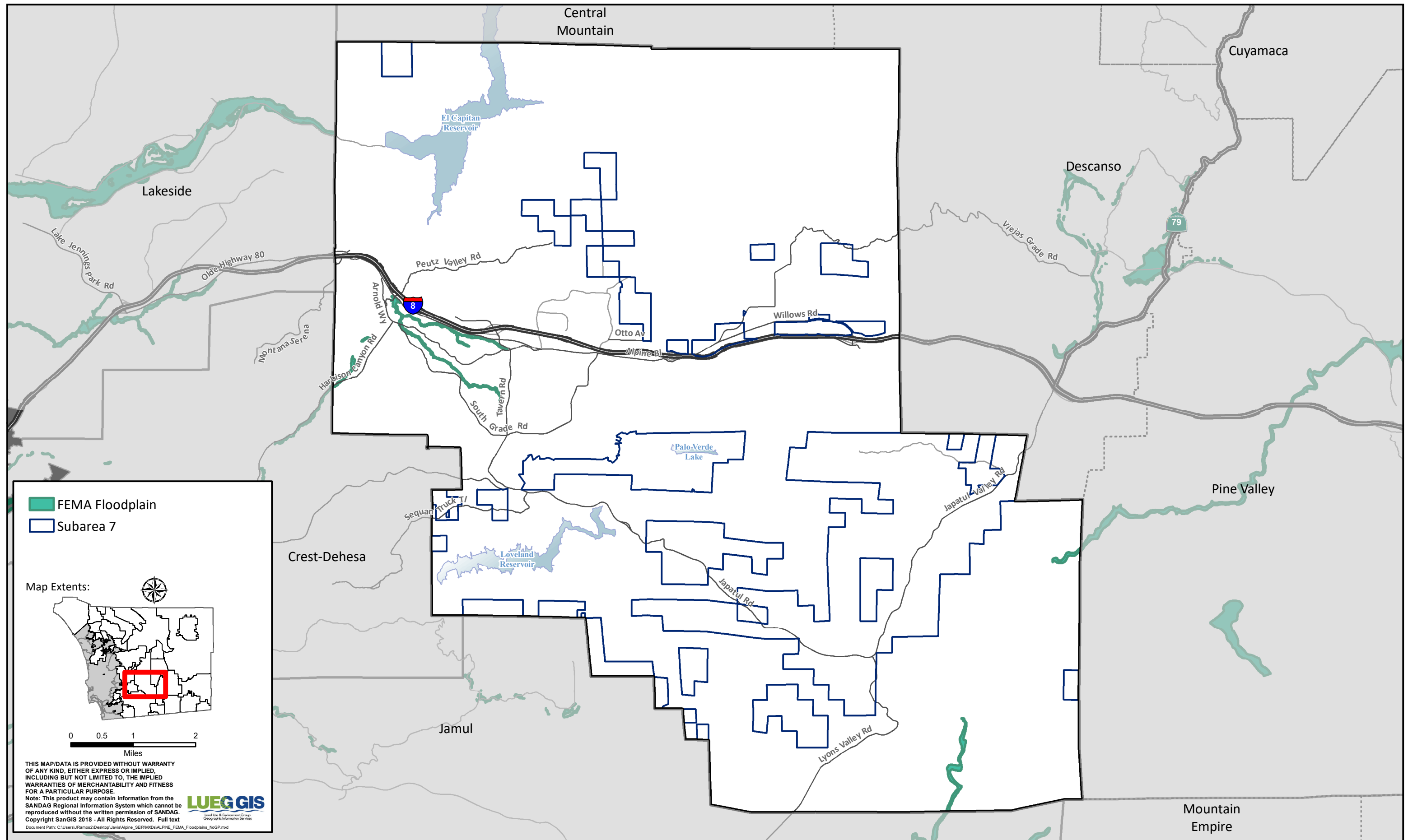


**Figure 2.8-6b**  
**County 100 Year Floodways**  
**Subarea 7**



Source: SanGIS, County of San Diego, 2020

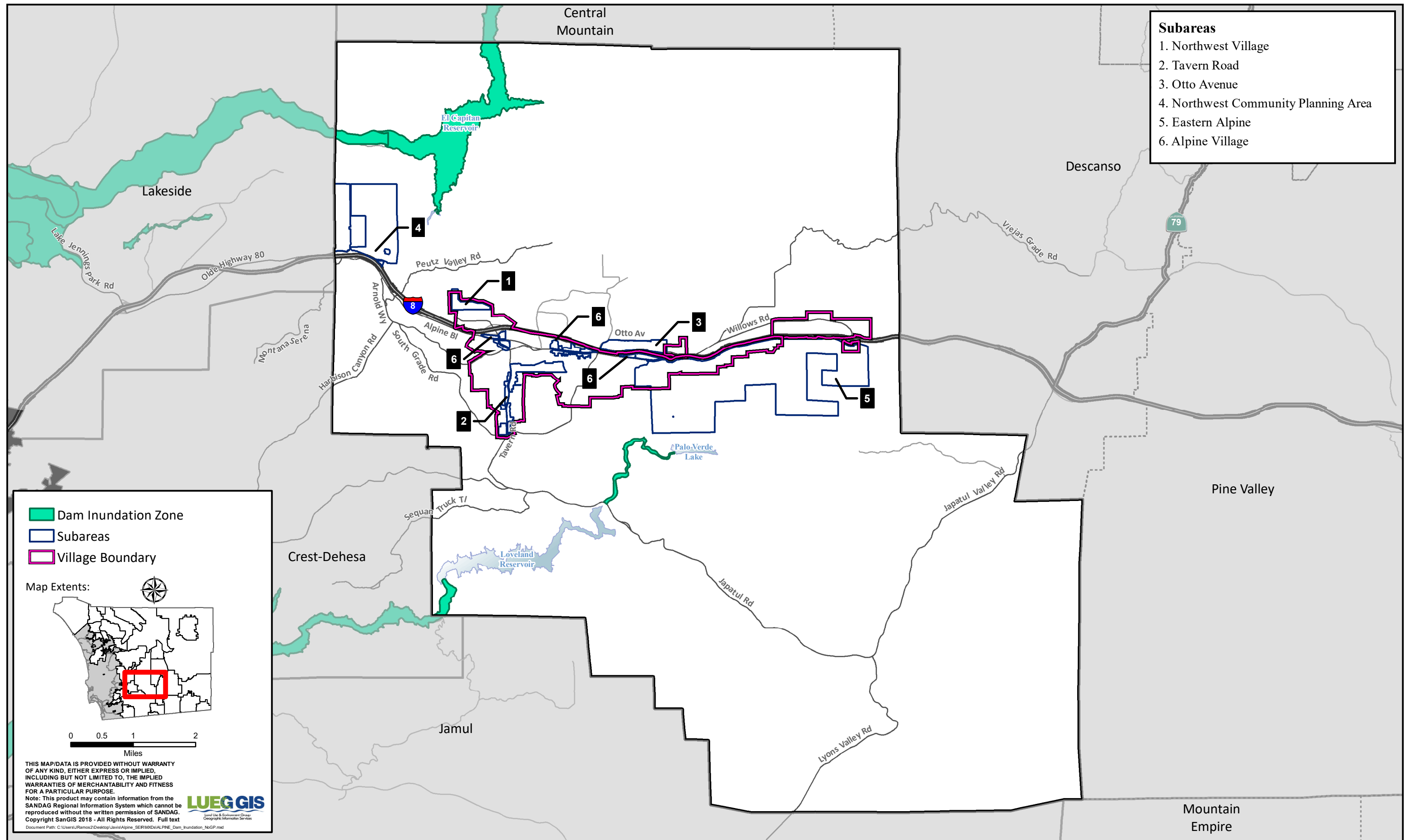
**Figure 2.8-7a**  
**FEMA Floodplains**  
**Subareas 1-6**



Source: SanGIS, County of San Diego, 2020

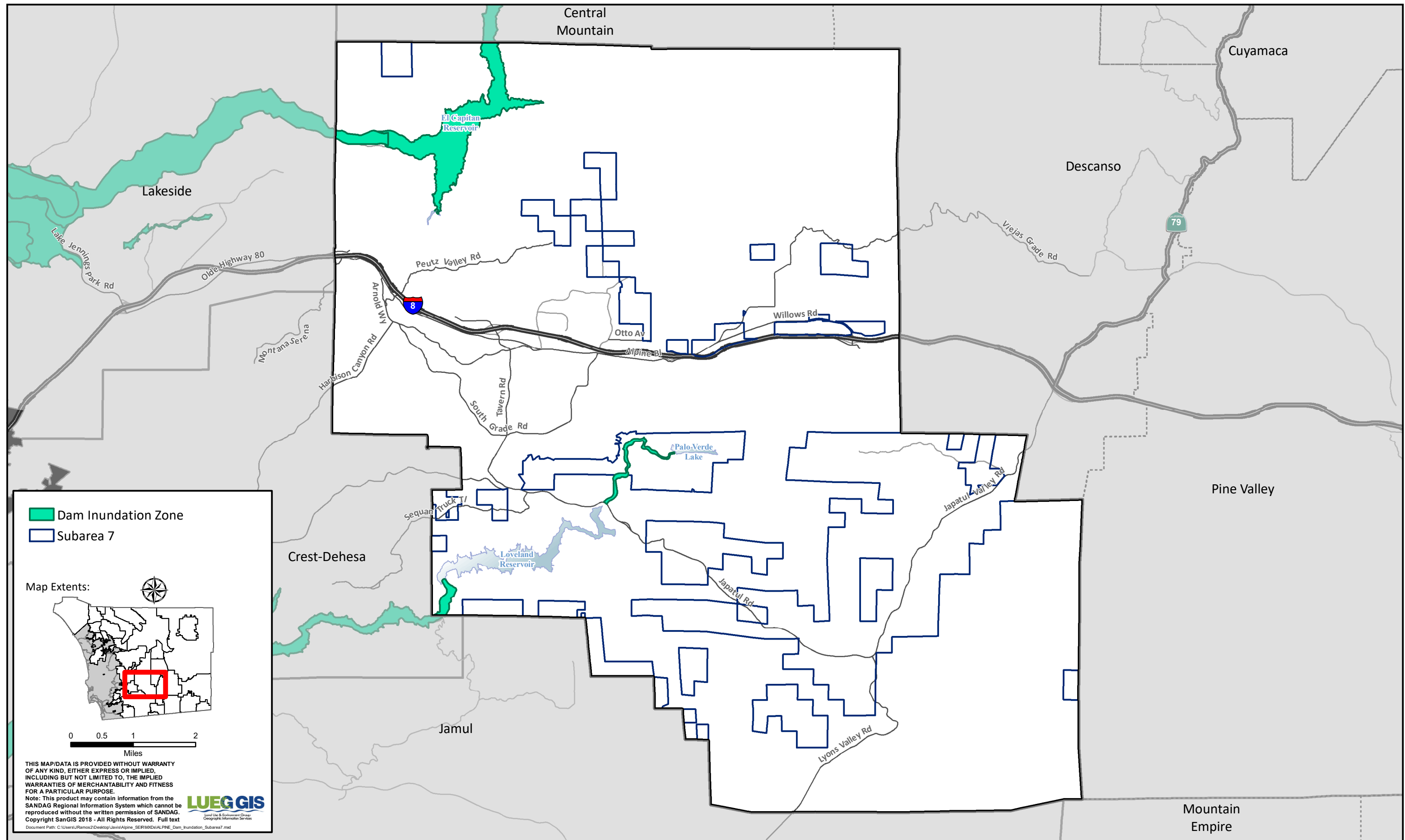
**Figure 2.8-7b**  
**FEMA Floodplains**  
**Subarea 7**





Source: SanGIS, County of San Diego, 2019

**Figure 2.8-8a**  
**Dam Inundation**  
**Subareas 1-6**



Source: SanGIS, County of San Diego, 2020

**Figure 2.8-8b**  
**Dam Inundation**  
**Subarea 7**