CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

FINAL SUBSTITUTE ENVIRONMENTAL DOCUMENT

FOR BASIN PLAN AMENDMENT INCORPORATING THE STATE WATER BOARD ONSITE WASTEWATER TREATMENT SYSTEMS POLICY, CHANGING THE WATER QUALITY OBJECTIVE FOR NITRATE FOR GROUNDWATER, AND MAKING OTHER UPDATES

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A. INTRODUCTION/DESCRIPTION OF PROPOSED ACTION

The *Water Quality Control Plan for the San Diego Basin* (Basin Plan) designates beneficial uses of water bodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) is proposing to amend the Basin Plan. The basin plan amendment makes the following changes to the Basin Plan:

i. Revises provisions of Chapter 4 regarding regulation of onsite wastewater treatment systems (OWTS), deletes the expired and obsolete conditional waiver of waste discharge requirements for OWTS, and incorporates the provisions of the State Water Resources Control Board's *Water Quality Control Plan for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems* (Policy) into the Basin Plan. [1]

ii. Revises Chapter 3 to change the groundwater quality objective for nitrate to the drinking water Maximum Contaminant Level (MCL) of 45 milligrams per liter (mg/L as NO_3) in all hydrologic areas/subareas in the Region, with the exception of the Warner Valley Hydrologic Area. With this change, all hydrologic areas in the Region except the Warner Valley Hydrologic Area will have the drinking water MCL as their nitrate water quality objective for groundwater. Warner Valley's freshwater replenishment beneficial use designation for groundwater precludes changing the nitrate objective.

iii. Revises Chapter 4 to add implementation provisions for the nitrate groundwater quality objective to protect surface-water quality where groundwater and surface water are interconnected.

iv. Revises Chapter 5 to include descriptions of State Water Resources Control Board (State Water Board) Policies, including the OWTS Policy (2012) and the Recycled Water Policy (2009, as amended in 2013).

v. Deletes the expired conditional waivers of waste discharge requirements (WDRs) and makes non-substantive changes to the Basin Plan to bring it up to date.

The basin plan amendment implements the San Diego Water Board's Practical Vision in several ways. The Basin Plan provides the foundation for all of the San Diego Water Board's regulatory actions. Keeping the Basin Plan up-to-date with current policies and regulations reflects the Board's values of communication and transparency espoused in the Practical Vision. In addition,

[1] Adopted on June 19, 2012. The OWTS Policy can be found at: http://www.swrcb.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf

the basin plan amendment process is a public process in which the San Diego Water Board holds public meetings on the proposed amendment, receives comments and input from the public, provides responses to comments received, and considers oral testimony at a public hearing. The basin plan amendment process is in line with goals outlined in the Practical Vision to maintain a proactive outreach and communication program that provides the public with user-friendly access to information.

The San Diego Water Board's Practical Vision[2] describes the means by which the agency will help water and wastewater agencies achieve the goal of a sustainable local water supply. A specific project called out in the Sustainable Local Water Supply Chapter (chapter 5) of the Practical Vision is to investigate revision of the nitrate water quality objective for groundwater to make recycled water more affordable to produce for landscape irrigation projects. This basin plan amendment takes that project a step farther by proposing to raise the groundwater quality objective for nitrate to 45 mg/L as NO_3. Raising the nitrate objective is expected to both foster increased use of recycled water for landscape irrigation projects and facilitate the use of the statewide waiver of waste discharge requirements for OWTS contained in the OWTS Policy. Groundwater quality objectives for nitrate are currently lower than the drinking water MCL of 45 mg/L as NO_3 in several of the hydrologic areas/sub areas in the San Diego Region, and may not be able to be economically achieved by some dischargers seeking to use recycled water for landscape irrigation, and potentially for groundwater recharge projects. Raising the groundwater quality objective for nitrate would encourage the increased use of recycled water as it will eliminate the need for dischargers to utilize supplemental treatment at additional cost to reduce nitrogen in wastewater to low levels, and would also allow the San Diego Water Board to streamline permitting by establishing consistent discharge specifications for nitrogen in permits that can be reasonably achieved. Any activities which contribute to increasing the use of recycled water in the San Diego Region contribute to reducing the Region's reliance on imported water supplies. These changes can be made while still protecting water quality and beneficial uses of groundwater and surface water.

B. PURPOSE OF THE SUBSTITUTE ENVIRONMENTAL DOCUMENT

The purpose of this Substitute Environmental Document (SED) is to present the San Diego Water Board's analysis of the need for and the effects of the proposed basin plan amendment and to meet the State Water Board's environmental review requirements. This SED presents an analysis of the potential direct and indirect impacts of the adoption of the proposed basin plan amendment on the environment, and other information relevant to the proposed basin plan amendment. For the purposes of this SED, the proposed basin plan amendment is also referred

[2]http://www.waterboards.ca.gov/sandiego/water_issues/Practical_Vision/docs/PV_5_Sustainable_Local_Water_Supply_Dec2013.pdf

to as the proposed project. This SED also serves as a written technical report and includes a completed Environmental Checklist (see Appendix A).

C. INCORPORATING THE STATE ONSITE WASTEWATER TREATMENT SYSTEMS POLICY IN THE BASIN PLAN

OWTS are used to treat domestic wastewater from residences and commercial and industrial establishments that are not connected to community sewer systems and or municipal wastewater treatment plants. The OWTS Policy establishes a statewide, risk-based, tiered approach for the regulation and management of new and replacement OWTS, and sets the level of performance and protection expected from OWTS. The purpose of the Policy is to allow for the continued use of OWTS, while protecting water quality and public health. The Policy recognizes that responsible local agencies can provide the most effective means to manage OWTS on a routine basis. Therefore, it is the intent of the Policy to efficiently utilize and improve upon, where necessary, existing local programs through coordination between the State and local agencies. The Policy was adopted by the State Water Board on June 19, 2012 and required the Regional Boards to incorporate the Policy through amendments to their Basin Plans.

Adoption of Resolution No. R9-2015-0008 and its attached revised basin plan language by the San Diego Water Board will fulfill this requirement of the Policy. The proposed amendment incorporates the OWTS Policy into the Basin Plan, and amends the criteria to be used by the San Diego Water Board and local agencies to regulate OWTS in the San Diego Region to be consistent with the Policy. The Policy also provides a waiver of the requirement to obtain WDRs for those OWTS that are in compliance with the applicable Tier requirements.

1. Implementation of the Policy

The Policy is organized into five separate implementation tiers (see details below). An OWTS that meets the criteria of one of the five tiers is eligible for the conditional waiver of WDRs, which defers regulation of the OWTS to a qualifying local county agency.

Tier 0

This tier applies to existing OWTS that are functioning as designed without surfacing effluent, and not located near surface water bodies impaired for nitrogen or pathogens. These OWTS are automatically included in Tier 0 (see Section 6.0 of the Policy). No action is required on the part of the owner, except maintaining the OWTS in good operating condition. An OWTS must have a projected flow of 10,000 gallons per day (gpd) or less to be included in Tier 0.

Tier 1

This tier applies to new and replacement OWTS that meet the siting and design criteria specified in the Tier 1 section of the Policy (see Sections 7.0 and 8.0 of the Policy). An OWTS must have a projected flow of 3,500 gpd or less to be included in Tier 1 and must meet the design and siting criteria specified in Sections 7.0 and 8.0 of the Policy.

Tier 2

This tier applies to new and replacement OWTS operating under a Local Agency Management Plan (LAMP). Tier 2 allows local agencies to submit LAMPs to the Regional Water Boards for approval and to manage installation and operation of qualifying OWTS under a LAMP. The LAMPs allow local agencies to establish alternative siting and design criteria for OWTS based on local conditions. The alternative criteria can include: differing system design requirements, differing siting controls such as system density and setback requirements, additional monitoring and maintenance requirements, different design criteria for use of alternative or advanced OWTS, and other considerations.

Local Agency Management Plans

A LAMP allows local agencies to establish requirements that differ from those specified in Tier 1 and manage the installation of new and replacement OWTS under those local programs. The Policy requires that local agencies consider the following in developing their LAMPs:

- Degree of vulnerability to pollution from OWTS due to hydrogeological conditions.
- High quality waters or other environmental conditions requiring enhanced protection from the effects of OWTS.
- Shallow soils requiring a dispersal system installation that is closer to ground surface than is standard.
- Location of OWTS in areas with high domestic well usage.
- Location of dispersal systems in areas with fractured bedrock.
- Location of dispersal systems in areas with poorly drained soils.
- Vulnerability of surface waters to pollution from OWTS.
- Surface waters within watersheds listed as impaired for nitrogen or pathogens.
- OWTS located within areas of high OWTS density.
- Parcel size and susceptibility to hydraulic mounding, organic or nitrogen loading, and whether there is sufficient area for OWTS expansion in case of failure.
- Geographic areas that are known to have multiple, existing OWTS predating any adopted standards of design and construction including cesspools.

- Geographic areas that are known to have multiple, existing OWTS located within either the pertinent setbacks listed in Section 7.5 of the OWTS Policy, or a setback that the local agencies finds is appropriate for that area.

Some local agencies may overlap the geographic jurisdiction of multiple regional water boards and some regions may include more than one local agency that may qualify to develop a LAMP under Tier 2 of the Policy. The Policy designates specific Regional Water Boards that are primarily responsible for review and approval of LAMPs for each county in the state, and requires the designated Regional Water Board to coordinate with other Regional Water Boards that have jurisdiction within the county. [3] San Diego County falls within the jurisdiction of both the San Diego and the Colorado River Basin Regional Water Boards. The San Diego Water Board is designated in the OWTS Policy as the Regional Water Board responsible for reviewing and approving the LAMP for San Diego County. As a result, the San Diego Water Board coordinated with the Colorado River Basin Water Board in reviewing and approving the LAMP for San Diego County. Riverside County falls within the jurisdiction of the San Diego, Colorado River Basin, and Santa Ana Regional Water Boards. The Colorado River Basin Water Board is designated in the OWTS Policy as the Regional Water Board responsible for reviewing and approving the LAMP for Riverside County. The San Diego Water Board will provide comments and recommendations and coordinate with the Colorado River Basin Water Board upon submittal of a LAMP for Riverside County.

The County of San Diego Department of Environmental Heath (San Diego DEH) submitted a LAMP to the San Diego Water Board on June 10, 2013. The LAMP was approved by the San Diego Water Board at its board meeting on April 15, 2015. The San Diego DEH will rely primarily on its LAMP for management and regulation of new and replacement OWTS in San Diego County. The San Diego Water Board recognizes that future administrative and/or technical modifications may be necessary for the San Diego DEH LAMP to remain an effective tool for the protection of water quality in the San Diego Region. The Basin Plan Amendment authorizes the Executive Officer to review and administratively approve future modifications to the San Diego DEH LAMP or decide to schedule an agenda item for further consideration of the LAMP by the San Diego Water Board.

Until the LAMPs for Riverside and Orange Counties are approved by the designated Regional Water Boards, new and replacement OWTS for projects in Riverside and Orange Counties must meet design, construction, and siting standards specified in the Tier 1 Section of the Policy, in addition to any local agency codes, ordinances and requirements.

[3] See Attachment 3 of the OWTS Policy.

Tier 3

This tier applies to existing, new, and replacement OWTS located near surface water bodies identified in the Policy as impaired for nitrogen or pathogens due to possible contributions from OWTS discharges. New or replacement OWTS near impaired water bodies have to comply with any applicable TMDL or special provisions identified in a LAMP. New or replacement OWTS not within 600 feet of water bodies listed in the OWTS Policy must meet the standards for supplemental treatment and other requirements specified in the Tier 3. The Policy does not identify any qualifying impaired water bodies in the San Diego Region.

Tier 4

This tier applies to any OWTS that require corrective action. OWTS that would fall under Tier 4 include systems with surfacing effluent, failing septic tanks or structural failure of septic tank leading to infiltrating or exfiltrating groundwater, and any OWTS that has affected or affects surface or groundwater to a degree that makes it unfit for drinking. These OWTS are required to be replaced or repaired to bring them under compliance in a timely manner.

Conditional Waiver of Waste Discharge Requirements for Onsite Wastewater Treatment Systems

Any person discharging waste or proposing to discharge waste that could affect the quality of waters of the State must file a report of waste discharge.[4] Upon receipt of that report of waste discharge, the San Diego Water Board prescribes requirements to the person as to the nature of the discharge with relation to the conditions existing in the disposal area or receiving waters.[5] The San Diego Water Board has the authority[6] to conditionally waive requirements to file reports of waste discharge and obtain WDRs for a specific discharge where such a waiver is consistent with the Basin Plan and is in the public interest.

The Basin Plan has included some version of a conditional waiver of WDRs, since the late 1970s, for discharges of domestic wastewater from OWTS consisting of septic tank/subsurface disposal systems, mound systems, or evapotranspiration systems. The implementation section of the Basin Plan was amended in 2009 to establish guidelines and criteria used by the San Diego Water Board to waive WDRs for selected OWTS serving residential, commercial, and industrial establishments. The Basin Plan contained a waiver of WDRs for OWTS serving residential projects with 5 family units or less; or OWTS serving commercial or industrial projects with a

[4] Wat. Code § 13260.
[5] *Id.* § 13263.
[6] *Id.* § 13269.

design flow of 1,200 gallons per day or less. Regulation of qualifying OWTS was deferred to the appropriate local agency. The San Diego Water waiver for OWTS expired in February 2014.

The Policy conditionally waives requirements to submit a report of waste discharge and associated application fees, and waives WDRs for OWTS that meet criteria of one of the five tiers (in addition to criteria specified in Section 12 of the Policy). The conditional waiver in the Policy replaces the San Diego Water Board's waiver for OWTS. This conditional waiver will allow for use of OWTS in a manner protective of water quality yet without requiring that the Discharger apply for WDRs from the San Diego Water Board. The Policy does not limit the San Diego Water Board's authority to require reports of waste discharge and to issue individual or general waivers or waste discharge requirements when such actions are needed to protect water quality. The Policy upholds and does not waive any basin plan prohibitions and/or local agency requirements.

2. Areas Served by Onsite Wastewater Treatment Systems in the San Diego Region

Census based projections estimate that there were 74,653 and 81,803 housing units in San Diego County served by OWTS in 2008 and 2013 respectively. California Wastewater Training and Research Center (CWTRC) based projections estimate that there were 80,429 and 81,108 housing units in San Diego County served by OWTS in 2008 and 2013 respectively. The number of housing units, and commercial and industrial establishments using OWTS in the San Diego Region could potentially increase with the construction of new developments.

Municipalities and special districts provide wastewater service within most of the urbanized portions of the San Diego Region. Special service districts provide wastewater service in less urbanized areas of San Diego County, including the communities of Whispering Palms, Valley Center, Fairbanks Ranch, Ramona, Rancho Santa Fe, and Pauma Valley. Sanitation districts operated by the County of San Diego provide wastewater service to inland communities such as Julian, Pine Valley, and Campo. Most residences, and commercial and industrial establishments outside of these districts, rely on OWTS for treatment of domestic wastewater (SDIRWM, 2013). Figure 1 below shows the boundaries of wastewater agencies in San Diego County. Most of the communities outside the boundaries of the wastewater agencies shown in Figure 1 rely on OWTS for treatment of domestic wastewater.

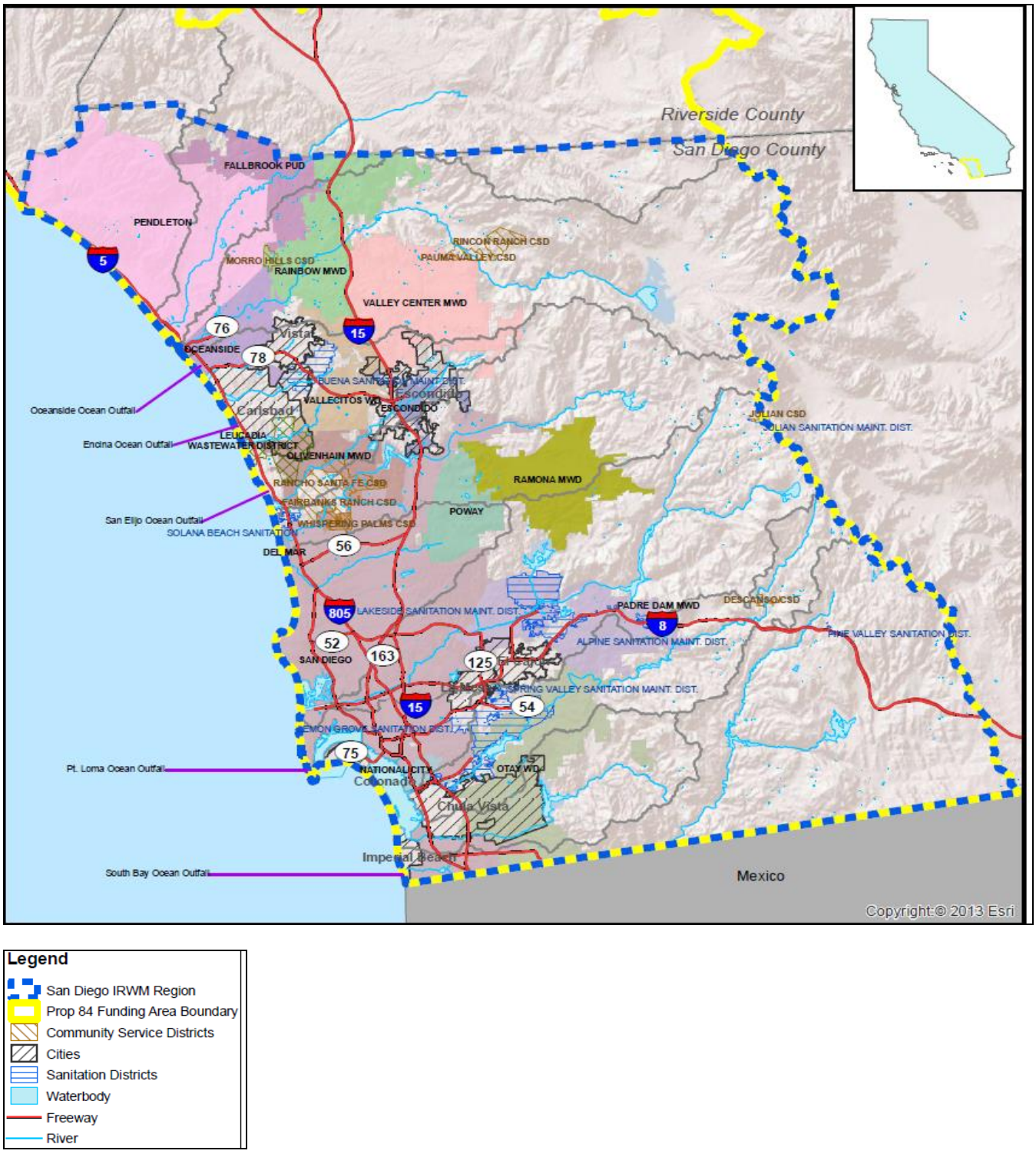

Figure 1. Wastewater Agency Boundaries (from Regional Water Management Group, 2013)

Water and wastewater services in the portions of Riverside County, located within the jurisdiction of the San Diego Water Board, are primarily provided by four water and wastewater districts: Eastern Municipal Water District (EMWD), Rancho California Water District (RCWD), Western

Municipal Water District (WMWD), and Elsinore Valley Municipal Water District (EVMWD). Boundaries of these agencies are delineated in Figure 2 along with adjacent water agencies outside of the Region. EMWD and WMWD are wholesale and retail water agencies. EVMWD and RCWD are retail agencies. As shown in Figure 2, these water and wastewater districts primarily serve the Temecula Valley area within the Region. Most portions of Riverside County within the jurisdiction of the San Diego Water Board that are outside the service area of the four districts shown in figure 2 rely on OWTS for treatment and dispersal of domestic wastewater. The rural communities to the east of Temecula, including Anza and Aguanga, rely primarily on OWTS for treatment and dispersal of domestic wastewater.

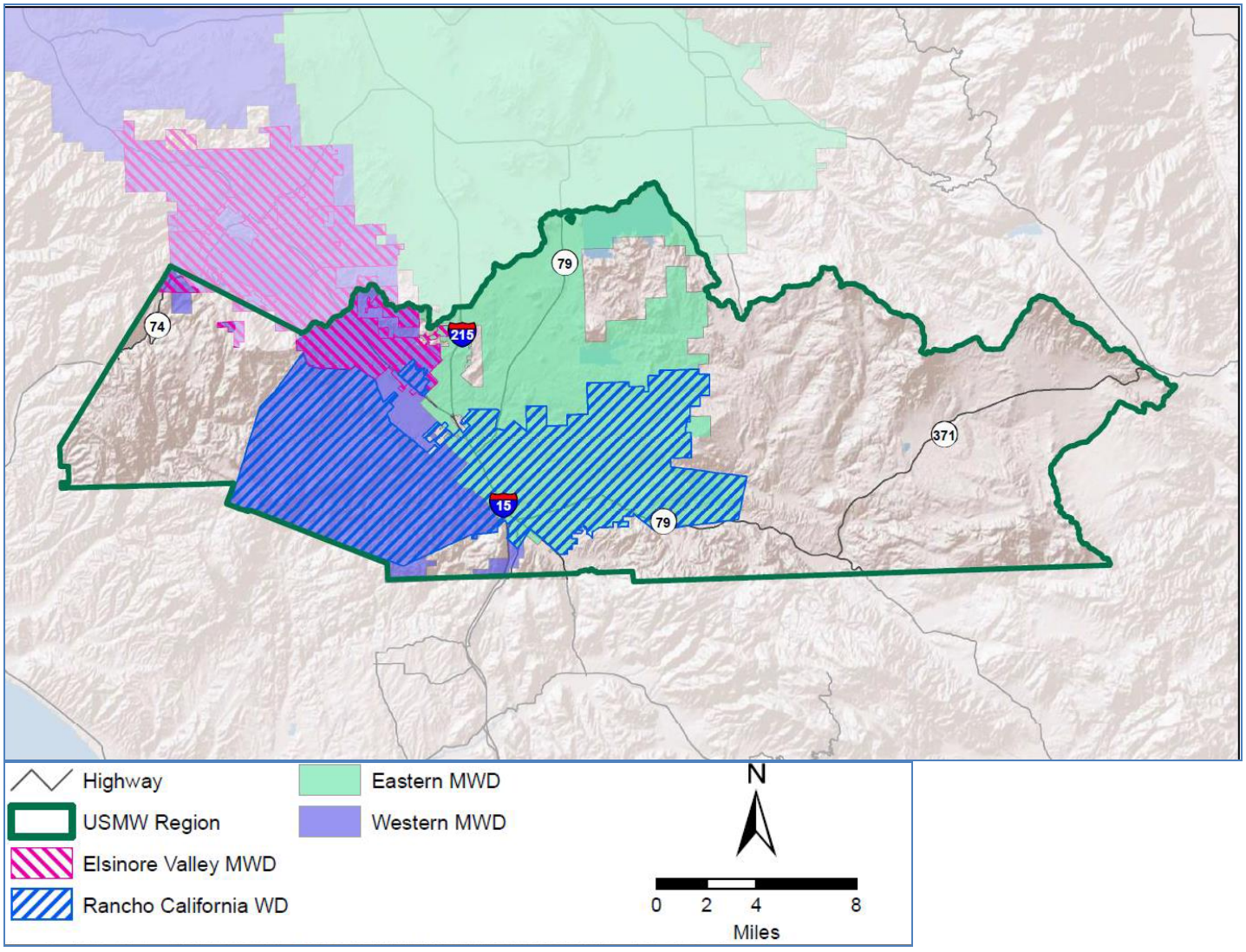

Figure 2. Wastewater District Boundaries in Southwest Riverside County (from 2014 Upper Santa Margarita Watershed Integrated Regional Water Management Plan Update)

3. Impacts from Onsite Wastewater Treatment Systems on Nitrate in Groundwater

The siting and design criteria in the OWTS Policy Tiers are conditioned to achieve the drinking water MCL for nitrate of 45 mg/L as NO_3 in receiving groundwaters. OWTS can be a significant contributor of nitrates to groundwater. Total nitrogen concentrations in typical septic tank effluent range from 50 to 90 mg/L as N, while total nitrogen concentrations in effluent produced from supplemental or advanced OWTS range from less than 10 to 60 mg/L as N. Most of the nitrogen compounds in OWTS effluent will be nitrified as the effluent passes through the soil column and become nitrate below the infiltrative surface. Once nitrates from OWTS reach groundwater, they can travel long distances as long, narrow, and definable plumes in concentrations that may eventually exceed drinking water standards (USEPA 2002). The direction of local groundwater flow controls the direction of the OWTS discharge plume. For any individual OWTS, the flow direction typically is not known, would require a costly study to determine, and can vary substantially with seasons and/or groundwater pumping from the basin. In a fractured rock aquifer it is rarely possible to predict or determine the direction of OWTS discharge flow, and nitrates can travel considerable distances with little or no dilution in these environments (Winneberger 1984).

Nitrate may be readily transported in groundwater but is also readily taken up from surface soils as a nutrient for vegetation. Denitrification, the anaerobic process that converts nitrate to nitrogen gas, can contribute to nitrogen reduction by up to 20 percent in wastewater percolating through the soil (USEPA 2002). Factors found to favor denitrification are fine-grained soils like silts and clays, and layered soils (alternating fine-grained and coarser-grained soils with distinct boundaries between the texturally different layers). This process may be particularly effective if the fine-grained soil layers contain organic material, because the process of denitrification also requires an adequate source of carbon (State Water Board, 2012b). In instances where vegetation is planted in the dispersal area, additional nitrogen removal can be achieved by plant uptake.

Tier 1 requirements in the Policy ensure that OWTS meet minimum siting and design standards for protection of environmental and public health from discharges of wastes. Section 7.8 of the Policy requires a minimum lot size/density of 0.5 to 2.5 acres per single family dwelling unit based on annual average precipitation rates. Higher precipitation results in greater dilution of OWTS effluent in the groundwater therefore smaller lot sizes can be allowed in areas of higher precipitation. The density requirements in Section 7.8 of the OWTS Policy were established by the State Water Board to adequately protect groundwater from nitrogen-related impacts in most instances. The allowable densities are expected to result in groundwater concentrations that comply with the drinking water maximum contaminant level (MCL) set at 45 mg/L nitrate as NO_3. The Policy, however, allows local agencies to adopt different siting and design criteria more appropriate for local conditions in LAMPs. The San Diego DEH's LAMP requires property

owners proposing an OWTS for a single family dwelling or its equivalent to demonstrate that their projects can meet the lot size requirements in the LAMP (based on section 7.8 of the OWTS Policy). Projects that cannot meet the allowable lot size requirements specified in the LAMP will be required to submit a study to the San Diego DEH demonstrating that no impacts to groundwater quality will occur if the lot size requirements cannot be achieved. Due to the increased nitrate loading to groundwater from OWTS with larger flows (between 3,500 to 10,000 gpd), the San Diego DEH LAMP requires the use of supplemental or advanced treatment of OWTS effluents to achieve a 50 percent total reduction in nitrogen when the estimated design flow of the OWTS is between 3,500 to 10,000 gpd. Use of conventional OWTS for projects with design flows between 3,500 to 10,000 gpd will only be allowed by the San Diego DEH if the Discharger submits an evaluation to the San Diego DEH completed by a qualified professional that demonstrates that the discharge from the OWTS will not adversely affect groundwater quality.

D. RATIONALE FOR CHANGES TO THE IMPLEMENTATION SECTION OF THE BASIN PLAN RELATED TO ONSITE WASTEWATER TREATMENT SYSTEMS

This section describes the rationale for changes that have been made to the implementation section of the Basin Plan (Chapter 4). The following revisions have been made to the implementation section of the Basin Plan to make it consistent with the Policy:

1. Chapter 4 – Implementation (Individual Domestic Subsurface Disposal Systems)

A discussion on use of advanced or alternative OWTS in Chapter 4 of the Basin Plan only includes requirements for mound systems, evapotranspiration (ET) systems, and evapotranspiration/ infiltration (ETI) systems; and does not include requirements or standards for other types of advanced or alternative OWTS. Performance and design standards for additional alternative or advanced OWTS are included in San Diego DEH's LAMP.

The revised text deletes the narrative portions which provided a summary of how the San Diego Water Board regulated OWTS in the past.

2. Chapter 4 (Regulation of Onsite Wastewater Treatment Systems-OWTS Policy)

This section is added to Chapter 4. It provides a description of the framework of the Policy, describes the five implementation tiers of the Policy, and includes references to the criteria that must be met for an OWTS to be eligible for a conditional waiver of WDRs under one of the five tiers. The text has been revised to include a description of the LAMP process, and how the implementation of the LAMP process affects actions by the Santa Ana (Region 8) and Colorado

River Basin (Region 7) Regional Water Boards, and the regulation of OWTS located in the San Diego Region.

3. Chapter 4 (Page 4-29, Individual Sewerage Systems)

This section is deleted from Chapter 4. This section included requirements for waiving WDRs under the 2007 waiver for Individual Sewerage Systems (or Individual OWTS). This section allowed the San Diego Water Board to waive WDRs for OWTS serving residential projects with five family units or less and for OWTS with design flows of 1,200 gpd or less serving commercial or industrial projects. This section also included conditions under which the San Diego Water Board could waive WDRs for projects with more than five family units and for OWTS with design flows greater than 1,200 gpd serving commercial or industrial projects.

Under the Tier 0 Section of the Policy, WDRs are waived for existing OWTS with design flows of 10,000 gpd or less that meet the requirements specified in Section 6.1 of the Policy. The Policy also waives WDRs for qualifying new OWTS that meet design, siting and operational criteria specified in Sections 7.0 and 8.0 of the Policy (Tier 1 Section with projected flows of 3,500 gpd or less). Pursuant to the Tier 2 Section of the Policy and the San Diego DEH's LAMP, the Policy waives requirements to obtain WDRs for new and replacement OWTS with design flows of 10,000 gpd or less; and that meet siting, design, and construction standards specified in the San Diego DEH's LAMP.

In addition to meeting tier specific requirements in the Policy, an OWTS must also comply with the conditions below to qualify for the conditional waiver of WDRs:[7]

- The OWTS must receive only domestic wastewater from residential or commercial buildings, or high-strength wastewater from commercial food service buildings that does not exceed 900 mg/L BOD and has a properly sized and functioning oil/grease interceptor (a.k.a. grease trap);
- The OWTS shall function as designed with no surfacing effluent;
- The OWTS shall not utilize a dispersal system that is in soil saturated with groundwater;
- The OWTS shall not be operated while inundated by a storm or flood event;
- The OWTS shall not cause or contribute to a condition of nuisance or pollution;
- The OWTS shall comply with all applicable local agency codes, ordinances and requirements;
- The OWTS shall comply with and meet any applicable TMDL implementation requirements, special provisions for impaired water bodies, or supplemental requirements imposed by Tier 3; and
- The OWTS shall comply with any corrective requirements imposed by Tier 3.

[7] See Section 12.0 of the OWTS Policy.

4. Basin Plan Figure 4-1

Basin Plan Figure 4-1 is deleted. This figure formerly established the minimum lot size density required to ensure that there was sufficient infiltration from rainfall recharge to ensure that that the discharge from the OWTS on the property would not cause groundwater quality to exceed the nitrate MCL of 45 mg/L in drinking water. Table 1 in the Tier 1 section of the Policy establishes allowable average lot size densities based on average annual rainfall. As a result, Figure 4-1 of the Basin Plan is superseded by the requirements of the Policy.

E. CHANGING THE GROUNDWATER QUALITY OBJECTIVE FOR NITRATE

Basin Plan Table 3-3 establishes groundwater quality objectives for nitrate in hydrologic areas and subareas where groundwater has designated municipal and domestic beneficial uses. Groundwater quality objectives for nitrate in these areas and subareas are established at 5, 10, 15, or 45 mg/L as NO_3. The basin plan amendment proposes to raise the groundwater quality objective for nitrate to 45 mg/L as NO_3 in all the hydrologic areas/subareas in the San Diego Region in which the groundwater quality objective is currently below 45 mg/L as NO_3, with the exception of the Warner Valley Hydrologic Area. The proposed change to the groundwater quality objective for nitrate is necessary in order to:

- Encourage the wider use of recycled water by reducing the cost to produce recycled water and address the need to increase use of recycled water in the Region to adapt to ongoing drought conditions. The adoption of less stringent groundwater quality objectives is expected to facilitate increased use of recycled water as it will eliminate the need for discharges to install supplemental treatment processes at their water reclamation facilities at additional cost to remove nitrate. Raising the groundwater quality objective for nitrate would also allow the San Diego Water Board to streamline permitting by establishing consistent discharge specifications for nitrogen in WDRs that can be reasonably achieved.

- Changing the nitrate water quality objective for groundwater to 45 mg/L as NO_3 will enable the San Diego Water Board to amend its Basin Plan to incorporate the OWTS Policy and utilize the conditional waivers of WDRs contained in the OWTS Policy. If the more stringent nitrate water quality objectives in the Basin Plan are not relaxed to the MCL in keeping with the Policy, the San Diego Water Board must develop its own waiver for OWTS capable of achieving the more stringent water quality objectives in receiving groundwaters, or issue WDRs for these systems.

Discharges of wastes that contribute nitrate to groundwater include discharges from wastewater treatment plants, discharges from OWTS, fertilizer application on agricultural operations and on

landscape, application of manure at animal operations, landscape irrigation (using potable water, groundwater, or recycled water), and similar discharges. The San Diego Water Board typically prescribes effluent discharge specifications for nitrate or total nitrogen at or below the applicable Basin Plan water quality objective for discharges from wastewater treatment plants or water reclamation facilities using treated effluent for irrigation or disposing of effluent via percolation basins. Discharge specifications can be set at levels less stringent than water quality objectives if a mass balance analysis shows that nitrate concentrations in effluent will be diluted through rainfall recharge, or nitrate will be removed through denitrification processes in the soil or through uptake by vegetation.

The proposed amendment changes the groundwater quality objective for nitrate to 45 mg/L as NO_3 in hydrologic areas or subareas with nitrate groundwater objectives more stringent than 45 mg/L as NO_3. The nitrate objective in the Warner Valley Hydrologic Area was not changed because this area is designated with the fresh water replenishment beneficial use. Groundwater from this basin is utilized for supplying water to a lake or stream. Thus, to support of the existing freshwater replenishment beneficial use, the nitrate groundwater quality objective will remain at 5 mg/L as NO_3 for the Warner Valley Hydrologic Area. The hydrologic areas/subareas where the nitrate objective is to be changed are listed in Table 1 along with their original nitrate objectives.

Table 1: Nitrate Water Quality Objectives for Groundwater

Hydrologic Area/Subarea (HA or HSA)	Basin Unit Number	Nitrate Water Quality Objective (mg/L as NO_3)
San Joaquin Hills HSA	901.11	10
Prima Deshecha HSA	901.31	10
Segunda Deschecha HSA	901.32	10
Ysidora HA[a]	902.10	10[c]
Deluz HA[m]	902.20	10
Deluz Creek HSA[m]	902.21	10
Gavilan HSA	902.22	10
Murieta HA	902.30	10[c]
Auld HA	902.40	10
Pechanga HA	902.50	10
Pauba HSA[o]	902.51	10
Wolf HA[p]	902.52	10
Wilson HA	902.60	10
Caverocks HA	902.70	10
Agunaga HA	902.80	10
Oakgrove HA	902.90	10
Lower San Luis Rey HA	903.10	10
Moosa HSA	903.10	10
Valley Center HSA	903.14	10
Pala HSA	903.21	15[c]
Pauma HSA	903.22	10[c]

Hydrologic Area/Subarea (HA or HSA)	Basin Unit Number	Nitrate Water Quality Objective (mg/L as NO_3)
La Jolla Amago HSA	903.23	5
Vista HSA[a]	904.22	10[b]
Agua Hedionda HA[a]	904.30	10
San Marcos HA [a,e]	904.50	10
Escondido Creek HSA	904.60	10
Escondido HSA	904.62	10
Hodges HA	905.10	10[b]
San Pasqual HA	905.30	10[b]
Santa Maria Valley HA	905.40	10
Santa Ysabel HA	905.50	5
Miramar Reservoir HA	906.10	10
Poway HA	906.20	10
Miramar HA [a,g]	906.40	10
Coches HSA	907.14	5[b]
El Monte HSA	907.15	5[b]
San Vicente HA	907.20	5
Conejos Creek HSA	907.31	5
Boulder Creek HA	907.40	5
National City HA	908.30	10
Middle Sweetwater HA	909.20	10
Upper Sweetwater HA	909.30	10
Otay Valley HA	910.20	10[b]
Dulzura HA	910.30	10

Endnotes

a. The water quality objectives do not apply westerly of the easterly boundary of Interstate Highway 5. The objectives for the remainder of the Hydrologic Area (Subarea) are as shown.

b. Detailed salt balance studies are recommended for this area to determine limiting mineral concentration levels for discharge. On the basis on existing data, the tabulated objectives would probably be maintained in most areas. Upon completion of the salt balance studies, significant water quality objective revisions may be necessary. In the interim period of time, projects of ground water recharge with water quality inferior to the tabulated numerical values may be permitted following individual review and approval by the Regional Board if such projects do not degrade existing ground water quality to the aquifers affected by the recharge.

c. The recommended plan would allow for measurable degradation of ground water in this basin to permit continued agricultural land use. Point sources, however, would be controlled to achieve effluent quality corresponding to the tabulated numerical values. In future years demineralization may be used to treat ground water to the desired quality prior to use.

e. The water quality objectives do not apply to hydrologic subareas 4.51 and 4.52 between Highway 78 and El Camino Real and to all lands which drain to Moonlight Creek, Cottonwood Creek and Encinitas Creek. The objectives for the remainder of the Hydrologic Area are as shown.

g. The water quality objectives do not apply west of Interstate Highway 15. The objectives for the remainder of the Hydrologic Area are as shown.

m. These objectives apply to the alluvial ground water beneath the Santa Margarita River from the confluence of Murrieta and Temecula Creeks through the Gavilan and DeLuz HSAs to a depth of 100 feet and a lateral distance equal to the area of the floodplain covered by a 10 year flood event. These objectives do not apply to ground water in any of the basins beneath De Luz, Sandia, and Rainbow Creeks and other unnamed creeks, which are tributaries of the Santa Margarita River.

o. These objectives apply to ground waters within 250 feet of the surface for the most downstream 4,200 acres of the Pauba HSA (2.51) which drain directly to the most downstream 2.7 mile segment of Temecula Creek. Excluded from this area are all lands upgradient from a point 0.5 miles east of the intersection of Butterfield Stage Road and Highway 79.

For reference figure 3 shows the all the hydrologic units, areas and, subareas of the San Diego Region, while Table 2 lists all the hydrologic units, areas and, subareas of the San Diego Region.

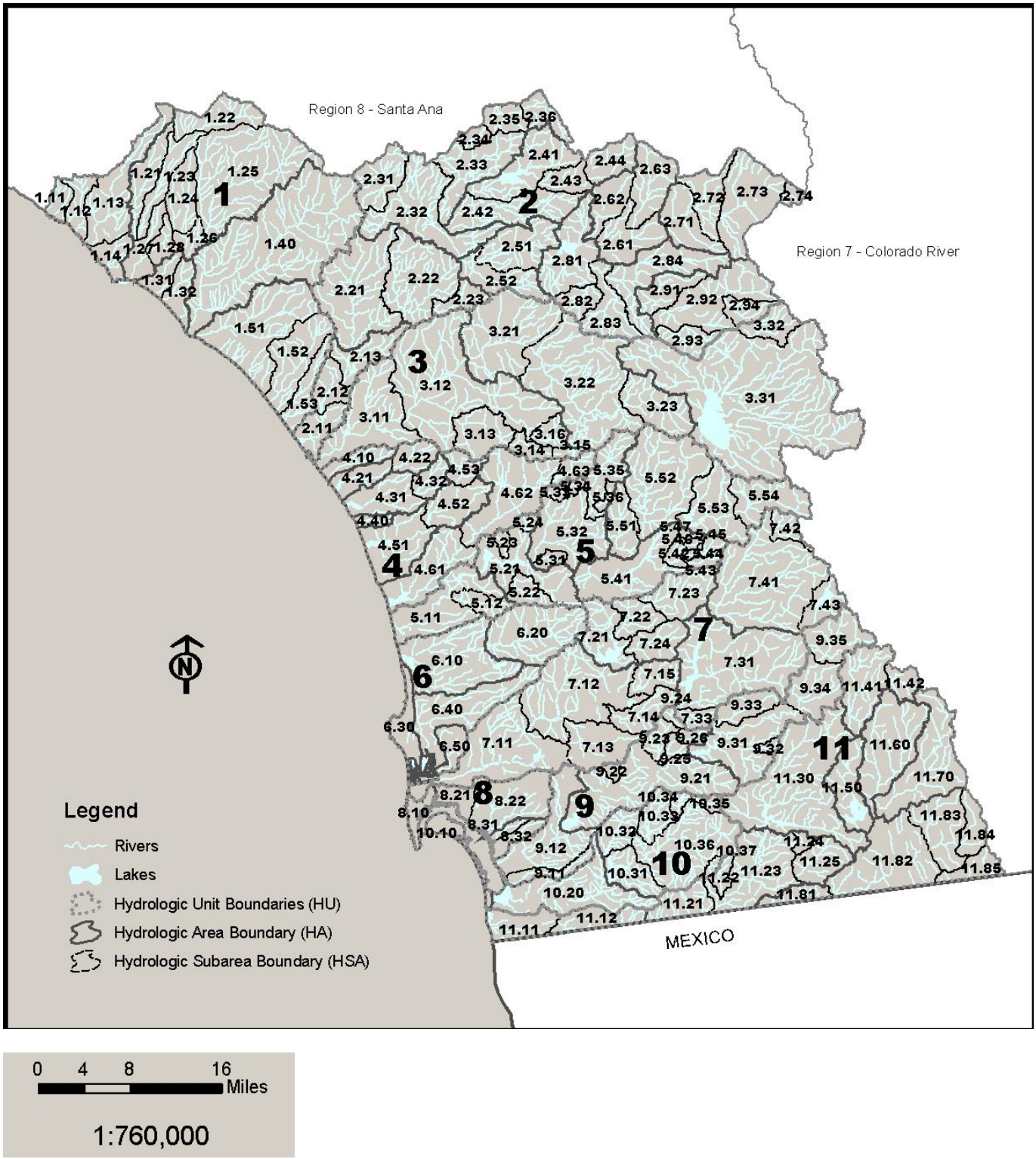

Figure 3: Hydrologic Units, Areas, and Subareas of the San Diego Region

Table 2: Hydrologic Units, Areas, and Subareas of the San Diego Region

BASIN NUMBER	HYDROLOGIC BASIN		BASIN NUMBER	HYDROLOGIC BASIN	
1.00	SAN JUAN HYDROLOGIC UNIT		2.74	Burnt	HSA
1.10	Laguna	HA	2.80	Aguanga	HA
1.11	San Joaquin Hills	HSA	2.81	Vail	HSA
1.12	Laguna Beach	HSA	2.82	Devils Hole	HSA
1.13	Aliso	HSA	2.83	Redec	HSA
1.14	Dana Point	HSA	2.84	Tule Creek	HSA
1.20	Mission Viejo	HA	2.90	Oakgrove	HA
1.21	Oso	HSA	2.91	Lower Culp	HSA
1.22	Upper Trabuco	HSA	2.92	Previtt Canyon	HSA
1.23	Middle Trabuco	HSA	2.93	Dodge	HSA
1.24	Gobernadora	HSA	2.94	Chihuahua	HSA
1.25	Upper San Juan	HSA			
1.26	Middle San Juan	HSA	3.00	SAN LUIS REY HYDROLOGIC UNIT	
1.27	Lower San Juan	HSA	3.10	Lower San Luis	HA
1.28	Ortega	HSA	3.11	Mission	HSA
1.30	San Clemente	HA	3.12	Bonsall	HSA
1.31	Prima Deshecha	HSA	3.13	Moosa	HSA
1.32	Segunda Deshecha	HSA	3.14	Valley Center	HSA
1.40	San Mateo Canyon	HA	3.15	Woods	HSA
1.50	San Onofre	HA	3.16	Rincon	HSA
1.51	San Onofre Valley	HSA	3.20	Monserate	HA
1.52	Las Pulgas	HSA	3.21	Pala	HSA
1.53	Stuart	HSA	3.22	Pauma	HSA
			3.23	La Jolla Amago	HSA
2.00	SANTA MARGARITA HYDROLOGIC UNIT		3.30	Warner Valley	HA
2.10	Ysidora	HA	3.31	Warner	HSA
2.11	Lower Ysidora	HSA	3.32	Combs	HSA
2.12	Chappo	HSA			
2.13	Upper Ysidora	HSA	4.00	CARLSBAD HYDROLOGIC UNIT	
2.20	DeLuz	HA	4.10	Loma Alta	HA
2.21	DeLuz Creek	HSA	4.20	Buena Vista Creek	HA
2.22	Gavilan	HSA	4.21	El Salto	HSA
2.23	Vallecitos	HSA	4.22	Vista	HSA
2.30	Murrieta	HA	4.30	Agua Hedionda	HA
2.31	Wildomar	HSA	4.31	Los Monos	HSA
2.32	Murrieta	HSA	4.32	Buena	HSA
2.33	French	HSA	4.40	Encinas	HA
2.34	Lower Domenigoni	HSA	4.50	San Marcos	HA
2.35	Domenigoni	HSA	4.51	Batiquitos	HSA
2.36	Diamond	HSA	4.52	Richland	HSA
2.40	Auld	HA	4.53	Twin Oaks	HSA
2.41	Bachelor Mountain	HSA	4.60	Escondido Creek	HA
2.42	Gertrudis	HSA	4.61	San Elijo	HSA
2.43	Lower Tucalota	HSA	4.62	Escondido	HSA
2.44	Tucalota	HSA	4.63	Lake Wohlford	HSA
2.50	Pechanga	HA			
2.51	Pauba	HSA	5.00	SAN DIEGUITO HYDROLOGIC UNIT	
2.52	Wolf	HSA	5.10	Solana Beach	HA
2.60	Wilson	HA	5.11	Rancho Santa Fe	HSA
2.61	Lancaster Valley	HSA	5.12	La Jolla	HSA
2.62	Lewis	HSA	5.20	Hodges	HA
2.63	Reed Valley	HSA	5.21	Del Dios	HSA
2.70	Cave Rocks	HA	5.22	Green	HSA
2.71	Lower Coahuila	HSA	5.23	Felicita	HSA
2.72	Upper Coahuila	HSA	5.24	Bear	HSA
2.73	Anza	HSA			

BASIN NUMBER	HYDROLOGIC BASIN	
5.30	San Pasqual	HA
5.31	Highland	HSA
5.32	Las Lomas Muertas	HSA
5.33	Reed	HSA
5.34	Hidden	HSA
5.35	Guejito	HSA
5.36	Vineyard	HSA
5.40	Santa Maria Valley	HA
5.41	Ramona	HSA
5.42	Lower Hatfield	HSA
5.43	Wash Hollow	HSA
5.44	Upper Hatfield	HSA
5.45	Ballena	HSA
5.46	East Santa Teresa	HSA
5.47	West Santa Teresa	HSA
5.50	Santa Ysabel	HA
5.51	Boden	HSA
5.52	Pamo	HSA
5.53	Sutherland	HSA
5.54	Witch Creek	HSA
6.00	PENASQUITOS HYDROLOGIC UNIT	
6.10	Miramar Reservoir	HA
6.20	Poway	HA
6.30	Scripps	HA
6.40	Miramar	HA
6.50	Tecolote	HA
7.00	SAN DIEGO HYDROLOGIC UNIT	
7.10	Lower San Diego	HA
7.11	Mission San Diego	HSA
7.12	Santee	HSA
7.13	El Cajon	HSA
7.14	Coches	HSA
7.15	El Monte	HSA
7.20	San Vicente	HA
7.21	Fernbrook	HSA
7.22	Kimball	HSA
7.23	Gower	HSA
7.24	Barona	HSA
7.30	El Capitan	HA
7.31	Conejos Creek	HSA
7.32	Glen Oaks	HSA
7.33	Alpine	HSA
7.40	Boulder Creek	HA
7.41	Inaja	HSA
7.42	Spencer	HSA
7.43	Cuyamaca	HSA
8.00	PUEBLO SAN DIEGO HYDROLOGIC UNIT	
8.10	Point Loma	HA
8.20	San Diego Mesa	HA
8.21	Lindbergh	HSA
8.22	Chollas	HSA
8.30	National City	HA
8.31	El Toyan	HSA
8.32	Paradise	HSA

BASIN NUMBER	HYDROLOGIC BASIN	
9.00	SWEETWATER HYDROLOGIC UNIT	
9.10	Lower Sweetwater	HA
9.11	Telegraph	HSA
9.12	La Nacion	HSA
9.20	Middle Sweetwater	HA
9.21	Jamacha	HSA
9.22	Hillsdale	HSA
9.23	Dehesa	HSA
9.24	Galloway	HSA
9.25	Sequan	HSA
9.26	Alpine Heights	HSA
9.30	Upper Sweetwater	HA
9.31	Loveland	HSA
9.32	Japatul	HSA
9.33	Viejas	HSA
9.34	Descanso	HSA
9.35	Garnet	HSA
10.00	OTAY HYDROLOGIC UNIT	
10.10	Coronado	HA
10.20	Otay Valley	HA
10.30	Dulzura	HA
10.31	Savage	HSA
10.32	Proctor	HSA
10.33	Jamul	HSA
10.34	Lee	HSA
10.35	Lyon	HSA
10.36	Hollenbeck	HSA
10.37	Engineer Springs	HSA
11.00	TIJUANA HYDROLOGIC UNIT	
11.10	Tijuana Valley	HA
11.11	San Ysidro	HSA
11.12	Water Tanks	HSA
11.20	Potrero	HA
11.21	Marron	HSA
11.22	Bee Canyon	HSA
11.23	Barrett	HSA
11.24	Round Potrero	HSA
11.25	Long Potrero	HSA
11.30	Barrett Lake	HA
11.40	Monument	HA
11.41	Pine	HSA
11.42	Mount Laguna	HSA
11.50	Morena	HA
11.60	Cottonwood	HA
11.70	Cameron	HA
11.80	Campo	HA
11.81	Tecate	HSA
11.82	Canyon City	HSA
11.83	Clover Flat	HSA
11.84	Hill	HSA
11.85	Hipass	HSA

1. Groundwater Quality in the San Diego Region With Respect to Nitrate

Several of the San Diego Region groundwater basins were extensively studied during past salt and nutrient management planning efforts conducted to support previous basin plan amendments; or as a result of efforts by water and wastewater agencies to increase recycled water use. Several wastewater agencies have initiated monitoring efforts to determine current levels of salt and nutrients in groundwater basins, as part of ongoing salt and nutrient management planning efforts required by the Recycled Water Policy (State Water Board 2013). These studies and planning efforts largely show that concentrations of nitrate in groundwater in most of the basins in the San Diego Region are below 45 mg/L as NO_3.

Salt and Nutrient Management Plans

Activities being conducted in support of developing salt and nutrient management plans (SNMPs) across the Region include identifying and quantifying salt and nutrient source loads, reviewing and assessing prior groundwater loading and modeling studies, determining assimilative capacity of groundwater basins to accept additional salt and nutrient loadings, and identifying salt and nutrient management strategies. Table 3 below shows groundwater quality information from SNMPs for the Lower Santa Margarita, San Juan, San Pasqual, Gower, Temecula, Santee, and Escondido basins.

Table 3: Groundwater Nitrate Concentrations in Salt and Nutrient Management Plans

Basin	Lead Stakeholder	Nitrate Concentrations (mg/L as NO3)	Groundwater Quality Objectives (mg/L)	Assimilative Capacity Exists at Current Water Quality Objective	Assimilative Capacity Exists at 45 mg/L NO_3
Lower Santa Margarita (Brown and Caldwell, 2012)	USMC Base Camp Pendleton	Average nitrate (1)	10	Yes	Yes
San Pasqual (CH2M Hill, 2013)	City of San Diego	Nitrate range (<0.2 to 174)	10	No	Yes
San Juan (HDR & Wildermuth Environmental Inc., 2013)	South Orange County Wastewater Authority	Nitrate range (non-detect to 15)	10 or 45	Assimilative capacity exists for nitrate in most of the basin.	Yes
Temecula	Rancho	Average nitrate	10	Assimilative	Yes

Basin	Lead Stakeholder	Nitrate Concentrations (mg/L as NO3)	Groundwater Quality Objectives (mg/L)	Assimilative Capacity Exists at Current Water Quality Objective	Assimilative Capacity Exists at 45 mg/L NO_3
(RMC Water and Environment, 2013)	California Water District	(1 to 11)		capacity exists for nitrate in portions of the basin.	
Santee (MWH, 2013)	Padre Dam Municipal Water District	Nitrate range (1.4 to 43.7)	45	To be determined	To be determined
Escondido (SAIC, 2013)	Rincon Del Diablo Municipal Water District	Nitrate range (5 to 160), average nitrate (38),	10	No	Yes
Gower (Todd Engineers, 2013)	Ramona Municipal Water District	Average nitrate in residential areas (25 to 30)	5	No	Yes

Groundwater Ambient Monitoring and Assessment Program

The State Water Board conducted an assessment of groundwater quality in the San Diego Region as part of its Groundwater Ambient Monitoring and Assessment (GAMA) Program. A total of 58 groundwater samples were collected between May and July 2004 from public water supply wells in the Temecula, Santa Margarita, Warner Valley, Sweetwater, and San Juan groundwater basins, and the hard rock study areas. Nitrate was detected in 17 of the 24 wells at concentrations (0.45 to 41 mg/L as NO_3) less than the MCL of 45 mg/L as NO_3 (USGS & State Water Board, 2004), and was not detected above 45 mg/L as NO_3 in samples collected from any of the wells. As part of the GAMA Domestic Well Project, groundwater samples were collected from 137 domestic wells across San Diego County between 2008 and 2009 (State Water Board, 2010). Only 20 of the 137 domestic wells sampled were located within a basin defined by the Department of Water Resources (see Figure 3 below). Twelve of the wells were located within the Santa Maria basin, two from the El Cajon basin, and one each from the San Luis Rey and San Diego River Valley basins. The other wells are located in "hard rock" areas of the Region. Nitrate was detected in 96 wells at concentrations ranging from 0.895 to 249 mg/L as NO_3, and detected above 45 mg/L as NO_3 in 25 of the 137 wells (State Water Board, 2010). Figure 5 below shows the location of the wells in which nitrate was detected above 45 mg/L as NO_3.

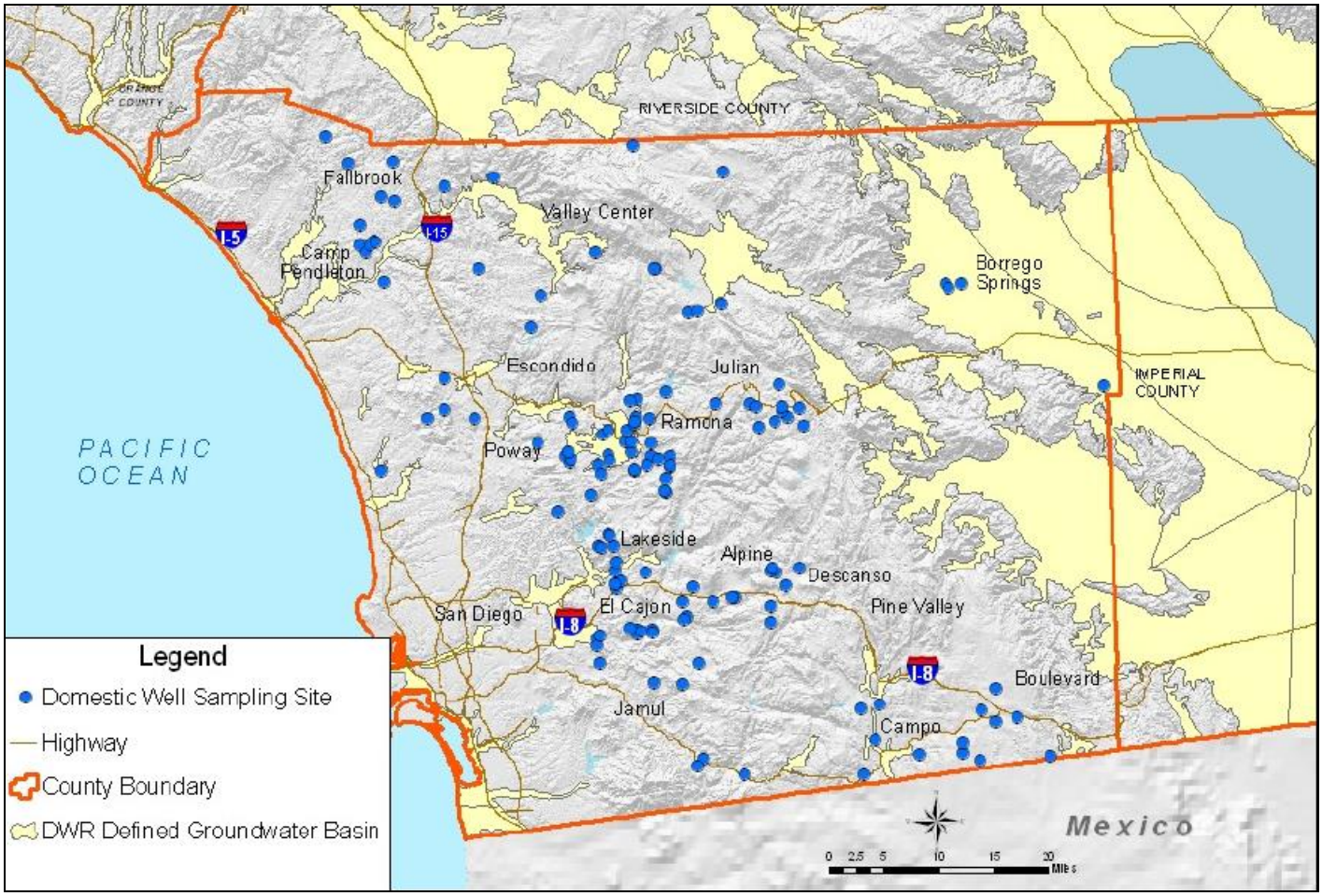

Figure 4. San Diego County GAMA Focus Areas 2008-2009 (State Water Board, 2010)

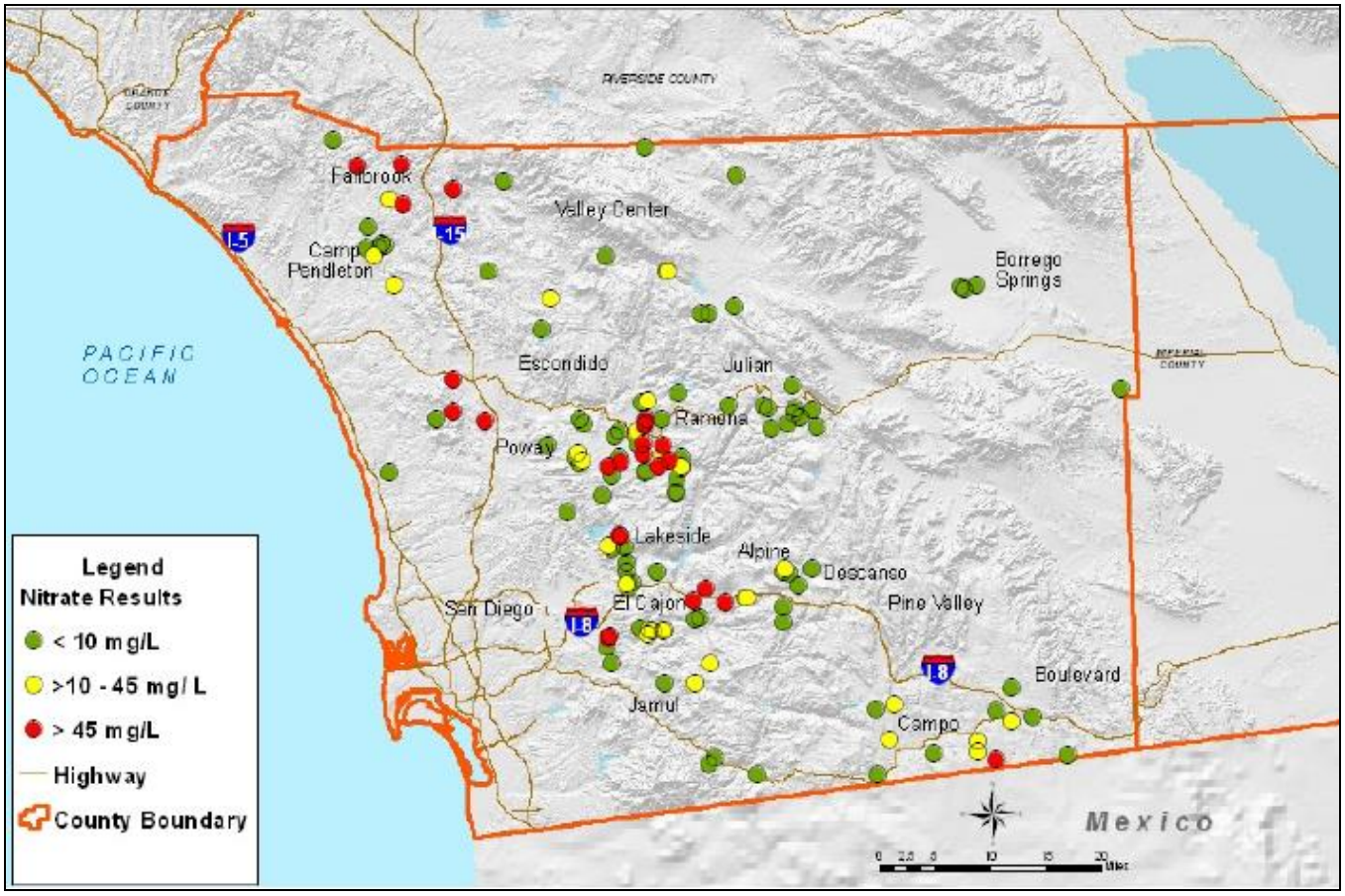

Figure 5. Domestic Well Nitrate Concentrations (State Water Board, 2010)

Based on this information, the GAMA Program concluded that only 3 percent of the primary aquifers in the San Diego Region have nitrate concentrations that exceed the drinking water MCL (USGS and the State Water Board, 2011).

Groundwater and surface waters interact with one another and discharges to one may result in changes to the other (USGS, 1998). Understanding this hydrologic setting is important in determining appropriate discharge specifications in WDRs. The United States Geological Survey (USGS) in its report titled, *The Quality of Our Nation's Waters-Nutrients in the Nation's Streams and Groundwater, 1992-2004* discussed nitrate contributions to streams from base flow. The USGS report concluded that 66 percent of streams evaluated had more than 37 percent of their total nitrate load contributed by base flow. The USGS report also stated that proportion of the total nitrate load in streams attributed to nitrate in base flow was significantly higher in areas with permeable soils or bedrock.

Groundwater can be a significant source of total nitrogen loading to surface streams that are interconnected with groundwater. The Basin Plan has a biostimulatory substances water quality objective for total nitrogen in surface water that requires levels be below those that stimulate algae and emergent plant growth. The water quality objective for total nitrogen is a function of

the natural ratio of total phosphorus to total nitrogen. In the absence of watershed specific ratios, a water quality objective for total nitrogen of 1 mg/L is used. Discharge specifications for facilities that contribute nitrate to groundwater must be at levels that will not cause or contribute to an exceedance of the biostimulatory substances water quality objective for surface waters if the receiving groundwater is interconnected with a surface water body. As previously discussed, discharges of wastes that contribute nitrate to groundwater include discharges from wastewater treatment plants, discharges from OWTS, fertilizer application on agricultural operations and on landscape, application of manure at animal operations, landscape irrigation (using potable water, groundwater, or recycled water), and similar discharges. Discharge specifications for nitrate in WDRs for these types of discharges must ensure that the discharges do not contribute to an exceedance of 1 mg/L total nitrogen in interconnected surface waters.

2. Antidegradation Analysis

Water quality objectives must conform to USEPA regulations[8] covering antidegradation and conform to State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Antidegradation Policy). Application of the antidegradation provisions to the water quality objective-setting process requires supporting documentation and appropriate findings whenever a water quality objective is made less restrictive to accommodate the discharge of pollutants or other activities of people. Water quality objectives are achieved primarily through the establishment of WDRs, and through implementation of the Basin Plan.

Changing the nitrate groundwater quality objective to 45 mg/L as NO_3 for the hydrologic areas/subareas listed in Table 1 complies with the State Antidegradation Policy articulated in State Water Board Resolution No. 68-16. The Antidegradation Policy requires that disposal of waste into the waters of the State be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than established by adopted policies and that higher quality water shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires the following:

- Higher quality water will be maintained until it has been demonstrated that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the policies.

[8] Analysis under the federal antidegradation policy set forth in Section 131.12 of title 40 of the Code of Federal Regulations is not required because the basin plan amendment to change the water quality objective for groundwater does not affect surface waters or waters of the United States. The State Antidegradation Policy applies to both groundwater and surface water.

- Any activity that produces a waste or may produce waste or increased volume or concentration of waste and discharges to existing high quality waters will be required to meet waste discharge requirements that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

Recycled water projects, proposed wastewater discharge projects, and other proposed dischargers of waste seeking WDRs from the San Diego Water Board must also demonstrate that their proposed discharges comply with the Antidegradation Policy.

Maximum Benefit to the People of the State

Changing the nitrate groundwater quality objective to the drinking water standard of 45 mg/L as NO_3 is consistent with the maximum benefit to the people of the State because it will provide continuing protection of the municipal and domestic beneficial uses of groundwater, encourage and facilitate increased use of recycled water in the Region, and allow for free use of property and for development in parts of the San Diego Region where sewage collection systems are not located in reasonable proximity to residences and commercial and industrial establishments.[9]

The State Water Board's Recycled Water Policy established a mandate to increase the use of recycled water in California by 200,000 acre feet per year (AFY) by 2020 and by an additional 300,000 AFY by 2030. The Recycled Water Policy states that the mandate shall be achieved through the cooperation and collaboration of the State Water Board, the Regional Water Boards, the environmental community, water purveyors and the operators of publicly owned treatment works. Establishing the nitrate groundwater quality objective at 45 mg/L as NO_3 will encourage the increased use of recycled water for landscape irrigation and other uses in place of imported water by lowering the cost of production of recycled water. Discharge specifications for nitrate established in WDRs are typically based on the nitrate groundwater quality objective for groundwater in the end use area. Establishing the nitrate groundwater quality objective at 45 mg/L as NO_3 will encourage the use of recycled water by allowing water reclamation plants to produce effluent that complies with the water quality objective without utilizing supplemental nitrogen removal processes at additional cost.

In an arid climate, such as the climate that exists in most of Southern California, the maximum benefit to the people of the state can only be achieved by ensuring long and short-term protection of economic opportunities, human health, and environmental protection. In order to do that, water uses must be better matched to water quality and use of local supplies must be encouraged to the extent possible, including reusing water that would otherwise flow to the ocean or other salt sinks without supporting beneficial uses during transmission. The increased use of

[9] See discussion of factors from Water Code 13241 in pages 26-35.

recycled water in place of both raw and potable water supplies for the non-potable uses improves water supply availability and helps to ensure that higher quality water will continue to be available for human uses and for instream uses for fish and wildlife.

The limited degradation of water that may occur as the result of water recycling provides maximum benefit to the people of California, provided recycled water treatment and use are managed to ensure long-term reasonable protection of beneficial uses of waters of the state. Recycled water available for reuse has been treated at a wastewater treatment plant to levels that comply with WDRs issued by the San Diego Water Board. Treatment technologies utilized at water reclamation plants include secondary and/or tertiary treatment and disinfection for pathogen removal.

WDRs issued by the San Diego Water Board will require application of recycled water at agronomic rates.[10] Dischargers shall consider soil types, climate, and plant demand in application of recycled water. Nitrogen in recycled water applied to crops or landscape will be taken up by the plants, lost to the atmosphere through volatilization of ammonia or denitrification, or stored in the soil matrix. As a result, nitrogen increases are unlikely to impair an existing and/or potential beneficial use of groundwater. To the extent use of recycled water may result in a discharge to a groundwater basin that contains high quality water, individual WDRs will require that the proposed discharge of recycled water complies with the Antidegradation Policy. In addition, Salt and Nutrient Management Plans, developed in accordance with the Recycled Water Policy, will require analysis on an ongoing basis to evaluate nitrate inputs to the basin, and available assimilative capacity of the basin.

No Unreasonable Effect on Present and Anticipated Beneficial Uses

The existing and potential beneficial uses designated for groundwater in the San Diego Region include municipal and domestic supply, agricultural supply, industrial process supply, industrial service supply, and freshwater replenishment. The freshwater replenishment beneficial use is the most sensitive of all the beneficial uses designated for groundwater. The Warner Valley Hydrologic Area is the only hydrologic area in the San Diego Region where groundwater has a freshwater replenishment beneficial use designation. The fresh water replenishment designation has been assigned to groundwater used for natural or artificial maintenance of surface water quantity or quality. In the Warner Valley, groundwater is pumped into Lake Henshaw to augment the water supply in that reservoir. Groundwater from the Warner Basin is used by the Vista Irrigation District as a source of recharge for Lake Henshaw. As a result, a groundwater quality objective of 5 mg/L as NO_3 will be retained in the Basin Plan for the Warner Hydrologic Area to support use of groundwater in the basin for recharging Lake Henshaw.

[10]Refers to the rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.

The high quality of all or part of a groundwater body may need to be maintained in order to support beneficial uses in interconnected surface-water bodies. For example, nutrients discharged into a surface water body via groundwater seepage could carry levels of nitrate that contribute to harmful algae blooms and low dissolved oxygen in the surface water body. The antidegradation policy requires that this be considered in establishing a nitrate discharge specification in waste discharge requirements for projects that discharge nitrate to groundwater. As part of this basin plan amendment, provisions have been added to Chapter 4 of the Basin Plan to be implemented in WDRs for OWTS, recycled water discharges, animal feeding operations, and agricultural and nursery operation discharges to land, all of which can contain significant nitrate loads. These provisions include measures like requiring Reports of Waste Discharge/WDR applications for new or proposed wastewater treatment systems to include a nitrate study, and nutrient management plans for agricultural and nursery operations to protect surface water quality from biostimulatory substances like nitrate that can enter surface water via groundwater pathways.

The next most sensitive beneficial use is municipal and domestic supply. Nearly all the hydrologic areas in the Basin Plan have municipal and domestic supply as an existing or potential beneficial use. High nitrate concentrations in domestic water supplies can be toxic to human life. Infants are particularly susceptible and may develop methemoglobinemia (blue baby syndrome) from consuming water containing high nitrate concentrations. Toxic effects occur when bacteria in an infant's stomach convert nitrate to more toxic nitrite, interfering with the body's ability to carry oxygen. High nitrate levels are also a health risk to pregnant women.

The USEPA set an MCL for nitrate of 10 mg/L as nitrate-nitrogen (which is equivalent to 45 mg/L as NO_3). The USEPA has set this level of protection based on the best available science to prevent potential health problems including methemoglobinemia. The USEPA also considers cost, benefits, and the ability of public water systems to detect and remove contaminants using suitable treatment technologies in setting MCLs.

The State Water Board, Division of Drinking Water (formerly the California Department of Public Health) adopted the State MCL for nitrate in drinking water at 45 mg/L as NO_3 in 1994 based on USEPA's MCL promulgated in 1991(OEHHA, 1997). In some cases MCL-setting involves relaxing a public health goal (PHG) due to costs of compliance. For nitrate, however, the MCL and the PHG are the same. PHGs are established by the California Office of Environmental Health Hazard Assessment (OEHHA). OEHHA's PHG for nitrate in drinking water is 45 mg/L as NO_3 based on the protection of infants from the occurrence of methemoglobinemia, the principal toxic effect observed in humans exposed to nitrate or nitrite. Following review of the current literature and a reevaluation of the bases for calculating the MCLs for these compounds, OEHHA determined that there was no scientific basis to propose alternative PHGs. Therefore, OEHHA adopted PHGs of 45 mg/L as NO_3 in drinking water in 1997(OEHHA, 1997). Furthermore, several epidemiological and case studies such as Bosch et al. (1950), Walton (1951), and Craun

et al (1981), determined the no-observed-adverse-effect-level (NOAEL) for nitrate to be 45 mg/L as NO_3. The drinking water MCL of 45 mg/L as NO_3 has been through the rule making and peer review processes, therefore no further peer review is necessary in raising the groundwater quality objective for nitrate to 45 mg/L as NO_3.

Thus, a groundwater quality objective of 45 mg/L as NO_3 is protective of municipal and domestic beneficial uses, and will also be protective of beneficial uses of groundwater for agricultural supply, industrial process supply, and industrial service supply since these uses are not affected by nitrate concentrations.

Will Not Result in Water Quality Less Than Described in the Basin Plan

This amendment changes the water quality objective for nitrate in groundwater. The implementation of this revised water quality objective in WDRs issued by the San Diego Water Board will not result in water quality less than described in the Basin Plan. As previously discussed, water quality objectives established in plans and policies are achieved primarily through the establishment of WDRs. A Regional Board, in prescribing requirements, does not have to authorize the full use of the waste assimilation capacity of the receiving waters.[11] Discharges of waste containing nitrate that could affect high quality groundwater or surface water must comply with WDRs mandating the best practicable treatment or control necessary to ensure that discharges of waste will not result in water quality less than described in the Basin Plan. As mentioned above, this Basin Plan amendment includes provisions in Chapter 4 of the Basin Plan to be implemented in WDRs for wastewater treatment systems, recycled water discharges, animal feeding operations, and agricultural and nursery operation discharges to land to protect interconnected surface water from exceeding the biostimulatory substances water quality objective for nitrogen.

3. Evaluation of Water Code 13241 Factors

Water Code Section 13241 specifies that each Regional Water Board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of the water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by Regional Water Boards in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

- Past, present, and probable future beneficial uses of water.
- Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

[11] See Water Code Section 13263, subdivision (b).

- Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
- Economic considerations.
- The need for developing housing within the region.
- The need to develop and use recycled water.

Past, Present and Probable Beneficial Uses of Water

The beneficial uses designated in the Basin Plan for the groundwater basins where the nitrate objective will be changed have remained the same since the first Basin Plan was adopted in 1975. The following beneficial uses are identified in the Basin Plan for groundwater and surface waters in the San Diego Region:

Table 4: Beneficial Uses for Groundwater and Surface Waters

Beneficial Uses	Abbreviations
Agricultural Supply	AGR
Aquaculture	AQUA
Preservation of Biological Habitats of Special Significance	BIOL
Cold Freshwater Habitat	COLD
Commercial and Sport Fishing	COMM
Estuarine Habitat	EST
Freshwater Replenishment	FRSH
Ground Water Recharge	GWR
Industrial Process Supply	PROC
Industrial Service Supply	IND
Inland Saline Water Habitat	SAL
Marine Habitat	MAR
Migration of Aquatic Organisms	MIGR
Municipal and Domestic Supply	MUN
Navigation	NAV
Hydropower Generation	POW
Noncontact Recreation	REC2
Preservation of Rate and Endangered Species	RARE
Shellfish Harvesting	SHELL
Spawning, Reproduction, and/or Early Development	SPWN
Warm Freshwater Habitat	WARM
Water Contact Recreation	REC1
Wildlife Habitat	WILD

The section of the SED which discusses compliance with the Antidegradation Policy considers the effect of changing the groundwater quality objective for nitrate on present and probable beneficial uses of water (see pages 29-31). In addition, implementation measures are included in Chapter 4 of the Basin Plan as part of this Basin Plan Amendment to ensure that, changing the groundwater quality objective for nitrate to 45 mg/L will not have an unreasonable effect on present and future beneficial uses of groundwater and surface waters.

Environmental Characteristics

Fate and transport of nitrate in groundwater could be affected by environmental/ hydrologic characteristics of the groundwater basin such as nature of the aquifers, patterns of recharge, groundwater pumping and replenishment, soil type, etc. Generally, these factors tend to dilute nitrate concentrations in effluent as it percolates through the soil to the water table and enters the groundwater flow system. The San Diego Water Board takes these factors into consideration in establishing discharge specifications for nitrate in WDRs to ensure that the nitrate water quality objective won't be exceeded in receiving waters.

Water Quality Conditions that Could Reasonably be Achieved

Discharges from wastewater treatment plants and water recycling facilities may not be able to reasonably achieve an effluent concentration of 45 mg/L as NO_3 without using supplemental nitrogen removal processes. The average nitrate concentrations for 29 of the water recycling facilities in the San Diego Region was about 41 mg/L as NO_3 in 2013 and about 46 mg/L as NO_3 in 2012. Factors such as denitrification in the soil, nutrient uptake by vegetation in the reuse/dispersal areas, and dilution by rainfall contribute to reducing the nitrogen concentration of applied wastewater leaching down to the groundwater. Other discharges that could affect water quality include discharges from conventional and advanced OWTS. The OWTS that comply with design and siting criteria specified in the Policy and additional requirements specified in the County of San Diego's LAMP are not expected to adversely affect water quality. Total nitrogen concentrations in typical septic tank effluent ranges from 50 to 90 mg/L as N, while total nitrogen concentrations in effluent produced from supplemental or advanced treatment of OWTS effluents may range from less than 10 to 60 mg/L as N[12].

Tier 1 requirements ensure that OWTS meet minimum standards for protection of environmental and public health from OWTS effluent. However, Tier 1 requirements would not require supplemental treatment for the removal of nitrogen compounds from wastes discharged from OWTS. Under some conditions, adverse impacts to groundwater quality are possible. This potential impact is mitigated in Section 7.8 of the Policy and the County of San Diego's LAMP by the requirement which limits OWTS in new subdivisions to the average lot size/density values in Table 1 for single-family dwelling units, or equivalent, for those units that rely on OWTS. The

[12] See Table 4.9 of the Substitute Environmental Document for the OWTS Policy: http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_sed_061912.pdf

OWTS lot size/density values in Table 1 of the Policy range from 2.5 acres to 0.5 acres per single family dwelling unit based on annual average precipitation rates. Higher precipitation results in greater dilution of OWTS effluent in the groundwater therefore allowing greater density of OWTS in areas of higher precipitation. Attachment 1 contains an evaluation of the necessary area (acres of land) and rainfall combination required for an OWTS discharge of 250 gallons per day to remain in compliance with the revised water quality objective for nitrate at 45 mg/L as NO_3. Projects that cannot meet the allowable lot size/density requirements specified in the LAMP will be required to submit a study to the San Diego DEH demonstrating that no impacts to groundwater quality will occur if the lot size requirements cannot be achieved.

The lot size/density requirements adequately protect groundwater from nitrogen-related impacts. The allowable densities are expected to prevent discharges from OWTS causing nitrate concentrations in groundwater to exceed 45 mg/L as NO3. This density requirement will slow or stop severe nitrate pollution in the groundwater in areas where the groundwater basin is not discrete and bounded by barriers that limit groundwater movement, other than what is removed by pumping.

Irrigation and application of fertilizer and soil amendments at agricultural operations can contribute nitrogen to groundwater and adversely affect water quality, as nitrogen from fertilizer infiltrates with deep-percolation water from crop root zones. Application of water and fertilizer at agronomic rates considering, soil, climate, and plant demand minimizes movement of nutrients beyond the plants root zone and will help prevent adverse impacts to groundwater quality.

Animal operations (e.g., horse ranches, grazing pastures) in the San Diego Region are usually found in rural areas with lower population densities than the urbanized areas. However, small horse ranches and individual horse corrals are sometimes found within urbanized areas with higher population densities.[13] Leachate from stored or stockpiled animal waste can infiltrate into the ground and contribute nitrogen to groundwater. Nitrogen and other nutrients can also be introduced into soil and groundwater from land application of compost and animal manure. Measures that can be implemented to ensure leachate from animal operations and land application of compost and animal waste does not adversely affect water quality include ensuring that animal holding pens, paddocks, and corrals are properly sized and sited in areas that do not drain to surface waters; and properly managing and storing animal wastes in a manner that prevents leaching pollutants into runoff.

Economic Considerations

Establishing the groundwater quality objective for nitrate at 45 mg/L as NO_3 will provide region wide economic benefits for wastewater agencies and dischargers proposing to use recycled

[13] The U.S. Census Bureau's 2000 data reported the City of San Diego to have a population density of 3,771 people per square mile.

water as it will reduce the cost of recycled water by eliminating the need for water recycling facilities to install additional nitrogen removal treatment processes at their facilities to ensure their discharges do not cause the groundwater to exceed the existing low groundwater quality objectives for nitrate.

Projects utilizing OWTS that meet design and siting criteria specified in the OWTS Policy and an applicable LAMP will have the requirement to obtain WDRs waived. An alternative to utilizing conventional OWTS would be connecting to a community sewer system or utilizing costly advanced OWTS. Many projects proposing to utilize OWTS are not located within reasonable proximity to community sewer systems or municipal wastewater treatment plants; as a result connection to these facilities is cost prohibitive. Establishing the nitrate groundwater quality objective at 45 mg/L as NO_3 will facilitate the continued use of conventional OWTS for projects that qualify for a waiver of WDRs, and will reduce the need to use costly advanced OWTS.

Use of advanced OWTS may be necessary in some parts of the San Diego Region if the groundwater quality objective for nitrate is not changed. Advanced OWTS are significantly more expensive than conventional OWTS. For example, a standard OWTS for a three bedroom home with 2 bathrooms is expected to cost approximately $10,000, including design and construction (State Water Board, 2012b). The cost for an advanced OWTS for the same type of home using supplemental treatment is expected to cost approximately $26,000 in addition to the leach field cost. The cost of an advanced OWTS that meets Tier 3 requirements for supplemental treatment for a school serving 716 students and including 34 faculty and 11 administrators and staff, is estimated at over $560,000 (State Water Board, 2012b). The cost of an advanced OWTS that meets Tier 3 requirements for supplemental treatment for a restaurant serving 213 meals per day is estimated at over $151,000 (State Water Board, 2012b). After reviewing some of these technologies, State Water Board staff has estimated operational costs for advanced OWTS ranges from $44-$336 per year depending on the system.

The Need for Developing Housing in the Region

Establishing the water quality objective for nitrate at 45 mg/L as NO_3 will not prevent development or limit the addition of housing within the San Diego Region. Instead, changing the water quality objective will allow for free use of property and continued development as it provides a basis for the San Diego Water Board to establish discharge specifications for nitrogen for wastewater treatment plants, water recycling facilities, and large OWTS while protecting water quality. Establishing the water quality objective for nitrate at 45 mg/L as NO_3 will also allow local agencies to regulate OWTS under their LAMP for protection of public health and water quality.

The Need to Develop and Use Recycled Water

On April 25, 2014, Governor Brown signed a proclamation declaring a drought State of Emergency in California. In the proclamation, the Governor stated that California is experiencing record dry conditions, with 2014 projected to become the driest year on record. In addition, the state's water supplies have dipped to alarming levels, indicated by: 1) limited snowpack in California's mountains, which is approximately 12 percent of the normal average for this date; 2) very low water levels for this time of year in California's largest reservoirs; 3) significantly reduced surface water flows in California's major river systems, including the Sacramento and San Joaquin Rivers; and 4) significantly reduced groundwater levels throughout the State.

The Governor ordered the State Water Board to take a number of actions to address the drought, including: 1) execute a statewide water conservation campaign; 2) expedite processing of water transfers, as called for in Executive Order B-21-13; 3) immediately consider petitions requesting consolidation of the places of use of the State Water Project and federal Central Valley Project, which would streamline water transfers and exchanges between water users within the areas of these two major water projects; 4) accelerate funding for water supply enhancement projects; 5) put water right holders throughout the state on notice that they may be directed to cease or reduce water diversions based on water shortages; 6) consider modifying requirements for reservoir releases or diversion limitations, where existing requirements were established to implement a water quality control plan; and 7) take actions necessary to make water immediately available.[14]

The San Diego Water Board and regional water purveyors are continually evaluating ways to increase the use of recycled water in response to drought conditions and as a means of reducing the Region's dependence on imported water sources. Increasing the water quality objective for nitrate to 45 mg/L as NO_3 would allow new and expanding water recycling facilities to produce recycled water without costly additional nitrogen removal processes, while still ensuring that discharges of recycled water do not adversely affect municipal or domestic groundwater supplies.

4. Water Code Section 13242

Chapter 4 of the Basin Plan contains a program of implementation for the water quality objectives in Chapter 3. Pursuant to Water Code section 13242, the program of implementation for achieving water quality objectives must include but not be limited to the following:

- A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private.
- A time schedule for actions to be taken.

[14] State Water Board Drought Year Water Actions: http://www.swrcb.ca.gov/waterrights/water_issues/programs/drought/index.shtml

- A description of surveillance to be undertaken to determine compliance with the objectives.

Pursuant to Water Code section 13242, the San Diego Water Board's main program of implementing the water quality objective for nitrate will be through establishment of WDRs. The San Diego Water Board typically establishes discharge specifications for nitrate or total nitrogen at levels that won't cause the concentration of nitrate in groundwater to exceed the applicable water quality objective for discharges that may introduce nitrates to groundwater, or have the potential to affect groundwater quality or the quality of interconnected surface waters. These discharge specifications for nitrate may be higher than the water quality objective if rainfall recharge, plant uptake of nutrients, or denitrification in the soil will lower the nitrate concentration in the effluent before it reaches the receiving groundwater body.

WDRs include requirements for dischargers to monitor for nitrate in effluent and/or groundwater to evaluate compliance with discharge specifications and water quality objectives. Pursuant to the State Recycled Water Policy, WDRs issued by the San Diego Water Board include requirements for recycled water purveyors to implement measures ensuring recycled water users apply fertilizer and recycled water at agronomic rates, and implement nutrient management measures identified in applicable salt and nutrient management plans. In addition, in the event that discharges of waste continually exceed discharge specifications for nitrate in applicable WDRs, the San Diego Water Board can pursue enforcement actions such as administrative enforcement orders requiring the discharger to cease and desist from violations, or to clean up waste and abate existing or threatened conditions of pollution or nuisance., and administrative civil liabilities. These enforcement orders may also include time schedules for the discharger to implement actions to correct violations.

For discharges of waste with significant nitrogen loads, the biostimulatory substances water quality objective may limit the discharge specification for nitrogen in WDRs for projects or facilities that discharge to land near surface water bodies. Discharges with significant nitrogen loads include:

- Discharges to land from OWTS and wastewater treatment plants.
- Deep percolation of rainfall or irrigation water from agricultural and nursery operations where nitrogen fertilizers have been applied.
- Deep percolation of rainfall or irrigation water from urban landscapes where nitrogen fertilizers have been applied.
- Deep percolation of recycled water applied for irrigation of agricultural and nursery lands, and urban landscapes.

This basin plan amendment includes implementation measures in Chapter 4 of the Basin Plan to ensure protection of water quality and beneficial uses in areas where groundwaters and surface waters are connected. The implementation measures added to Chapter 4 are intended to ensure

that the types of discharges described above do not adversely affect groundwater quality and surface-water quality.

F. OTHER REVISIONS TO THE BASIN PLAN

The basin plan amendment also makes the following non-substantive changes to the Basin Plan:

1. Chapter 5 (Plans and Policies)

Chapter 5 of the Basin Plan is updated to add references and general descriptions of the OWTS Policy (Resolution No. 2012-0032) and the Recycled Water Policy (Resolution No. 2009-011). Footnotes that include links to the OWTS and Recycled Water Policies on the State Water Board's web site have also been added to Chapter 5.

2. Other Revisions

The expired conditional waivers will be deleted from the Basin Plan. Resolution No. R9-2007-0104 which was adopted by the San Diego Water Board on October 10, 2007, expired on February 3, 2014 and amended the Basin Plan to incorporate conditional waivers of WDRs for specific types of discharges within the San Diego Region. These expired conditional waivers have been replaced by Order No. R9-2014-0041, which renews and revises the expired waivers and includes three new waivers. The waivers address discharges that are expected to pose a low threat to water quality.

Several sections of the Basin Plan are revised to clarify language and to make them more consistent with current practices. These changes are administrative and non-substantive and do not alter any beneficial uses, water quality objectives, or implementation provision of the Basin Plan.

G. ENVIRONMENTAL ANALYSIS

The San Diego Water Board's discretionary decisions are typically subject to the requirements of the California Environmental Quality Act (CEQA).[15] Under the CEQA, the San Diego Water Board is the lead agency for evaluating the environmental impacts of the reasonably foreseeable methods of compliance with the proposed amendments to the Basin Plan. The adoption of a basin plan amendment is an activity subject to CEQA requirements because basin plan

[15] The CEQA is set forth in Public Resources Code section 21000 et seq.

amendments may constitute rules or regulations requiring the installation of pollution control equipment, establishing a performance standard, or establishing a treatment requirement.[16]

The CEQA authorizes the Secretary of the Resources Agency to certify State regulatory programs, designed to meet the goals of the CEQA, as exempt from its requirements to prepare an Environmental Impact Report, Negative Declaration, or Initial Study. The State Water Board and the San Diego Water Board's basin plan amendment process is a certified regulatory program and is therefore exempt from the CEQA's requirements to prepare such documents.[17]

The State Water Board's CEQA implementation regulations[18] describe the environmental documents required for basin plan amendment actions. Pursuant to California Code of Regulations title 23 section 3777, any water quality control plan, State policy for water quality control, and any other components of California's water quality management plan as defined in Code of Federal Regulations, title 40 sections 130.2(k) and 130.6, proposed for board approval or adoption must include or be accompanied by a SED and supported by substantial evidence in the administrative record. The San Diego Water Board prepared this SED to fulfil this requirement.

This SED was prepared by the San Diego Water Board for the basin plan amendment in accordance with the Water Board's certified regulatory program (CCR title 23 sections 3777 to 3781). As required by regulations, the SED includes an environmental analysis of the project, a completed environmental checklist, and other documentation required by law.

The SED prepared for the basin plan amendment only assesses environmental impacts from the proposed action to raise the groundwater quality objective for nitrate to 45 mg/L as NO_3. The State Water Board prepared a SED for the OWTS Policy in accordance with the Water Board's certified regulatory program. The State Water Board approved the OWTS Policy and the accompanying SED on June 19, 2012. The proposed amendments incorporate the OWTS Policy and remove certain existing Basin Plan provisions regulating OWTS that are no longer applicable as a result of the OWTS Policy. No substantive changes or modifications to the previously approved OWTS Policy are proposed, no substantial changes with respect to circumstances under which the project will be undertaken have occurred, and no new information triggers the need for supplemental or subsequent CEQA analysis. These amendments are wholly within the scope of the OWTS Policy as analyzed by the State Water Board in the existing SED. As such, the recommended actions do not require further environmental review pursuant to the certified regulatory program or CEQA. The non-substantive non-regulatory changes to the Basin Plan in this amendment are not subject to environmental review under CEQA because they will have no

[16]Cal. Code Regs., *tit.* 14, § 15187(a).
[17]Cal. Code Regs., *tit.* 14, § 15251(g) and Pub. Res. Code § 21080.5.
[18] Cal. Code Regs., *tit.* 23, § 3720 et seq. "Implementation of the Environmental Quality Act of 1970."

effect on the environment. Therefore, no environmental analysis of the non-substantive changes is required.

H. SCOPE OF THE ENVIRONMENTAL ANALYSIS

The CEQA has specific provisions that establish the scope of the environmental analysis required for the adoption of this basin plan amendment. The CEQA limits the scope to an environmental analysis of the reasonably foreseeable methods of compliance with the proposed groundwater quality objective for nitrate. The State Water Board CEQA Implementation Regulations for Certified Regulatory Programs[19] require the environmental analysis to include at least the following information:

1. A brief description of the proposed project (described in section A).

2. An identification of any significant or potentially significant adverse environmental impacts of the proposed project (none were identified).

3. An analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts (none were identified, see section K).

4. An environmental analysis of the reasonably foreseeable methods of compliance (see section L). The environmental analysis must include, at a minimum, all of the following:

    a. An identification of the reasonably foreseeable methods of compliance with the project (see section L).

    b. An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance. The reasonably foreseeable methods of compliance for the project will not result in any reasonably foreseeable significant adverse environmental impacts (see section M).

    c. An analysis of reasonably foreseeable alternative methods of compliance that would have less than significant adverse environmental impacts (see sections L and M).

    d. An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance. The reasonably foreseeable methods of compliance for the project will not result in any significant adverse environmental impacts. As a result, no mitigation measures are proposed (see section M).

As demonstrated by the environmental checklist (Appendix A), the basin plan amendment to raise the nitrate water quality objective and the reasonably foreseeable methods of compliance discussed below will not result in any significant or potentially significant impacts to the environment. In addition, no alternatives to the basin plan amendment are proposed because they are not necessary to avoid or reduce any significant or potentially significant impacts. An analysis of alternatives to the project is not required when review of the project shows that the project would not have any significant or potentially significant effects on the environment.[20] This SED also finds that the reasonably foreseeable methods of compliance with the project will not result in any significant or potentially significant impacts to the environment. As a result, analysis of reasonably foreseeable mitigation measures is not required.[21]

I. BRIEF DESCRIPTION OF THE PROPOSED PROJECT

The project description is provided in Section A above.

J. SIGNIFICANT OR POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

No significant or potentially significant environmental impacts of the proposed project were identified in the environmental checklist (Appendix A).

K. ANALYSIS OF REASONABLE ALTERNATIVES TO THE PROJECT

Based on the information in the environmental checklist, no fair argument exists that the basin plan amendment will result in any reasonably foreseeable significant adverse environmental impacts. Therefore, no analysis of reasonable alternatives or mitigation measures are required by CEQA because they are not necessary to avoid or reduce any significant or potentially significant impacts.[22]

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[19] Cal. Code Regs., *tit.* 23, § 3777.

[20] Cal. Code Regs., *tit.* 14, §§ 3777 (e) and (f).

[21] *Ibid.*

[22] *Id.* At § 3777 (e).

L. ANALYSIS OF REASONABLY FORESEEABLE METHODS OF COMPLIANCE

This section identifies a range of reasonably foreseeable method(s) of compliance with the basin plan amendment. The most reasonably foreseeable methods that a discharger may utilize to ensure their discharge of waste will comply with discharge specifications and not cause groundwater to exceed 45 mg/L (the proposed groundwater quality objective for nitrate), or interconnected surface water to exceed 1 mg/L total nitrogen is to implement management measures (MMs), and structural and non-structural best management practices (BMPs). Typical MMs/BMPs that may be selected by dischargers are described below.

1. Implementation of Measures Identified in Salt and Nutrient Management Plans

The State Water Board's Recycled Water Policy (Recycled Water Policy) requires that local stakeholders (which include water supply and wastewater agencies, municipalities, recycled water purveyors, etc.) develop salt and nutrient management plans (SNMPs) for groundwater basins in California. It is the intent of the Recycled Water Policy that salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The State Water Board found that the appropriate way to address salt and nutrient issues is through the development of regional or subregional SNMPs rather than through imposing requirements solely on individual recycled water projects. The development of the SNMPs is intended to allow for more efficient management of all contributors of salt and nutrients on a watershed basis, and provide information to the Regional Water Boards that may allow for streamlined permitting of recycled water projects water while protecting water quality.

Individual SNMPs in the San Diego Region have been developed for the San Juan, Temecula, Lower Santa Margarita, San Pasqual, Escondido, Gower, and Santee groundwater basins. These SNMPs include implementation measures to manage salt and nutrient loading in the basins on a sustainable basis. Implementation measures identified in the individual SNMPs to manage nutrient loading include connecting areas served by OWTS to sewage collection systems; repairing leaks in the sewage collection system; increased stormwater infiltration; Indirect Potable Reuse projects; improved nutrient management at agricultural and landscape irrigation operations, etc. A collective SNMP has also been developed, and published in the Integrated Regional Water Management (IRWM) Plan by the San Diego County Water Authority, for the small low priority inland and coastal basins in the San Diego Region.

2. Non-structural Controls

Non-structural controls typically are aimed at controlling sources of a pollutant and generally do not involve new construction. Non-structural controls are expected to be the first methods to be

utilized by facilities such as agricultural operations, composting operations, or animal feeding operations to ensure their operations or waste discharges do not cause concentrations of nitrate groundwater to exceed 45 mg/L as NO_3, or cause total nitrogen in interconnected surface water bodies to exceed 1 mg/L. No potentially significant impacts on the environment were identified for these controls.

- **Nitrate Studies.** Reports of Waste Discharge/WDR applications for new/proposed wastewater treatment systems must include a nitrate study. The purpose of the nitrate study is to provide the San Diego Water Board with the information needed to establish discharge specifications for nitrate concentrations in effluent that will not cause the biostimulatory substances water quality objective for total nitrogen to be exceeded in any surface water body interconnected with receiving ground water. In some cases, the use of additional treatment processes to remove nitrogen may be necessary to ensure discharges of treated wastewater will not cause concentrations of nitrate in groundwater to exceed 45 mg/L as NO_3 or total nitrogen in interconnected surface water bodies to exceed 1 mg/L.

- **Application of Nutrients and Water at Agronomic Rates.** Agricultural and irrigation operations must ensure that fertilizers, soil amendments and water (particularly recycled water) are applied at agronomic rates.[23] In addition, agricultural and landscape irrigation operations must ensure irrigation systems are properly designed and operated to prevent runoff from application areas and excessive application of water.

- **Proper Waste Management**. Properly manage and store waste to prevent storm water and surface runoff from reaching waste storage areas, and prevent leaching or infiltration pollutants to groundwater. Proper waste management can also include, but is not limited to, moving and/or discharging wastes to areas with adequate distance from surface water; complying with local, state, and federal ordinances and regulations; and obtaining any required approvals, permits, certifications, and/or licenses from authorized local agencies.
- **Facility Inspection and Maintenance.** Conduct regular inspections of facilities to identify potential sources of pollutants and locations where discharged wastes may potentially impact waters of the state. Routine inspection and maintenance is an efficient way to prevent potential nuisance situations (e.g., odors, mosquitoes, weeds, etc.), to minimize or eliminate the potential for erosion and pollutants to impact waters of the state, and to reduce the need for repair maintenance.

[23] The irrigation and nitrogen requirements of a plant needed for optimal growth and production. Nitrogen requirements may be as cited in professional publications for California or recommended by the County Agricultural Commissioner, a Certified Agronomist or Certified Soil Scientist. Irrigation rates may be established through the California Irrigation Management Information System (CIMIS), available at <http://wwwcimis.water.ca.gov/cimis/welcome.jsp>.

- **Facility Management Plans.** Adopt a facility management plan to ensure that products and wastes are stored, used, and disposed of in ways that minimize exposure to storm water. Proper use of products such as fertilizer and compost, and proper disposal of wastes such as plant crop residues can reduce or eliminate discharges to waters of the state, and reduce potential for wastes to infiltrate to groundwater.
- **Design, Sizing, and Location of Facilities**. Properly design, size, and site facilities to minimize or eliminate the potential for pollutants to impact surface waters or groundwater.

- **Education**: Dischargers should become educated about the potential sources of pollutants at their facility, potential water quality impacts from sources of pollution at their facility, and measures that may be implemented to ensure discharges of waste from their facilities do not adversely affect water quality. When dischargers become educated about pollutants and their potential impacts, they can implement measures to reduce or eliminate the potential for pollutants to reach and impact waters of the state.

3. Structural Controls

Structural controls may be utilized to treat, divert, and/or store, discharges of waste. Reasonably foreseeable structural controls that may be implemented by the dischargers are not expected to have significant construction or operation requirements, and are expected to have less than significant and/or short-term impacts on the environment. Structural controls such as advanced OWTS can be used to ensure discharges of domestic wastewater from residences, or commercial or industrial establishments do no adversely impact water quality. Examples of other structural controls that may be utilized include riparian buffer zones, diversion and containment systems, etc.

- **Advanced Onsite Wastewater Treatment Systems.** OWTS are used to treat domestic wastewater from residences and commercial and industrial establishments that are not connected to community sewer systems or municipal wastewater treatment plants. When properly designed, sited, operated, and maintained, OWTS treat domestic wastewater to reduce its polluting impacts on the environment and public health. The most common type of OWTS is the septic tank-leach field disposal system. Advanced or alternative OWTS provide additional removal of pollutants such as nitrogen, pathogens, organics, suspended solids, oil and grease, and nitrogen found in wastewater. Some advanced OWTS have been certified by the National Science Foundation as capable of achieving at least a fifty percent removal rate for nitrogen. Subsurface drip dispersal systems are often used for dispersal of effluent from advanced or alternative OWTS. Subsurface drip dispersal systems are an example of pressure-dosed distribution systems capable of delivering small, precise volumes of wastewater effluent to the soil. Subsurface drip dispersal

systems are typically installed at shallow depths which allows for maximum uptake of nitrogen by vegetation in the disposal area. In some cases, advanced OWTS may be used to ensure discharges of treated wastewater will not cause concentrations of nitrate in groundwater to exceed 45 mg/L as NO_3 or total nitrogen in interconnected surface water bodies to exceed 1 mg/L.

- **Riparian Buffer Zones**. Riparian buffers are vegetated areas next to water resources that protect water quality, bank stabilization, and aquatic and wildlife habitat. Riparian buffer zones can remove nitrogen from surface water runoff and shallow subsurface flow from agricultural and growing operations, and remove nitrogen in leachate and surface runoff from manure or compost storage areas in animal operations.

- **Diversion and Containment Systems.** Diversion and containment systems can be used to capture storm water and/or prevent discharge of pollutants. Storm water on residential and commercial developments can be captured and redirected to pervious areas or infiltration basins. Increased storm water infiltration from residential and commercial developments can help dilute concentrations of nitrate in groundwater. Diversion and containment systems consist of berms, roofs, liners, or enclosures to drain storm water away from discharged wastes, capture runoff from discharged wastes, and/or contain and isolate discharged wastes.

M. ANALYSIS OF REASONABLY FORESEEABLE SIGNIFICANT ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE METHODS OF COMPLIANCE

Based on the information provided in the environmental checklist, there are no reasonably foreseeable significant environmental impacts associated with the methods of compliance discussed above. Therefore, no analysis of reasonably foreseeable alternative methods of compliance or analysis of reasonably foreseeable mitigation measures are required by CEQA[24] because they are not necessary to avoid or reduce any significant or potentially significant impacts.

N. OTHER REQUIREMENTS OF CEQA FOR CERTIFIED REGULATORY PROGRAMS

The CEQA requires that the environmental analysis for certified regulatory programs take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites. The San Diego Water Board is not required to conduct a site-specific project level analysis of the methods of compliance.

[24] *Id*. at § 3777 (f).

1. Reasonably Foreseeable Methods of Compliance at Specific Sites

The San Diego Water Board analyzed various reasonably foreseeable methods of compliance at specific sites within the San Diego Region. Because this project is large in scope (the entire San Diego Region), the specific sites analysis was focused on reviewing potential compliance methods within various land uses. Land uses in this analysis include: residential and commercial areas served by advanced OWTS, animal operations (e.g., dairies/intensive livestock/horse ranches), and agriculture. These land uses represent a range of population densities and geographical settings found in the San Diego Region where this basin plan amendment may be applicable.

The following discussion involves a programmatic level review of specific site compliance methods, or combination of compliance methods that have been or may be implemented. The dischargers are in no way limited to using the controls included here, and may choose not to implement these particular controls.

In general, the San Diego Water Board anticipates the use of management measures and/or non-structural and structural controls in ensuring discharges do not cause the concentration of nitrogen in groundwater to exceed 45 mg/L as NO_3 or total nitrogen in interconnected surface water bodies to exceed 1 mg/L.

Use of Advanced Onsite Wastewater Treatment Systems

In some cases, use of advanced OWTS may be necessary to ensure discharges of treated wastewater from residences and commercial and industrial establishments do not adversely affect water quality or cause concentrations of nitrate in groundwater to exceed 45 mg/L as NO_3. The County of San Diego Department of Environmental Health's (San Diego County DEH) Local Agency Management Program currently specifies that OWTS receiving a projected flow over 3,500 gallons per day must either utilize an advanced OWTS certified by the NSF or a third party tester as capable of achieving 50 percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the County DEH completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.

OWTS are used to treat domestic wastewater from residences and commercial and industrial establishments that are not connected to community sewer systems or municipal wastewater treatment plants. When properly designed, sited, operated, and maintained, OWTS treat domestic wastewater to reduce its polluting impacts on the environment and public health. The most common type of OWTS is the septic tank-leach field disposal system.

Advanced or alternative OWTS provide additional removal of pollutants such as nitrogen, pathogens, organics, suspended solids, oil and grease, and nitrogen found in wastewater. Some advanced OWTS have been certified by the National Science Foundation as capable of

achieving at least a fifty percent removal rate for nitrogen. Subsurface drip dispersal systems are often used for dispersal of effluent from advanced or alternative OWTS. Subsurface drip dispersal systems are a method of pressure-dosed distribution systems capable of delivering small, precise volumes of wastewater effluent to the soil. Subsurface drip dispersal systems are typically installed at shallow depths which allows for maximum uptake of nitrogen by vegetation in the disposal area.

Potential Controls for Animal Operations

Animal operations (e.g., horse ranches, grazing pastures) in the San Diego Region are usually found in rural areas with lower population densities than the urbanized areas. However, small horse ranches and individual horse corrals are sometimes found within urbanized areas with higher population densities.[25]

Leachate from stored or stockpiled animal waste can infiltrate into the ground and contribute nitrogen to groundwater. Nitrogen and other nutrients can also be introduced into soil and groundwater from land application of compost and animal manure. An example of non-structural controls includes ensuring that animal holding pens, paddocks, and corrals are properly sized and sited in areas that do not drain to surface waters. Other examples include properly managing animal wastes (i.e., stored in a manner that prevents stormwater from coming into contact with animal waste).

Examples of structural controls that can be used at animal operations include installation of roof gutters to divert rain water away from manure and/or prevent erosion, and the use of riparian buffer zones that absorb and filter runoff and minimize or prevent surface runoff and pollutants from reaching waters of the state. No adverse environmental effects are expected as a result of implementing these types of structural controls.

Potential Controls for Agricultural Areas

Agricultural operations (e.g., farms, nurseries) in the San Diego Region are usually found in rural areas with lower population densities than the urbanized areas.

Non-structural controls may be used to ensure agricultural operations or discharges from agricultural operations do not adversely affect water quality or cause concentrations of nitrogen in groundwater to exceed 45 mg/L as NO_3 or interconnected surface water to exceed 1 mg/L total nitrogen. An example of non-structural controls includes having a facility management plan that outlines the proper use of any products and/or waste products (i.e., storage and application rates

[25] The U.S. Census Bureau's 2000 data reported the City of San Diego to have a population density of 3,771 people per square mile.

of fertilizers, pesticides, etc.), proper management of any wastes (i.e., storage, composting and/or disposal of plant crop residues), proper management and use of soil amendments (i.e., storage and application rates of composts or mulches that may include green wastes and/or manure), and proper irrigation practices (e.g., irrigation schedule, low flow irrigation system) to minimize or eliminate the discharge of pollutants to waters of the state. Education of employees about the elements in the management plan will also help in the implementation of such non-structural controls.

In some cases, structural controls may be required. An example of a structural control is the use of riparian buffer zones between crops and any nearby surface waters.

2. Economic Factors

This section presents the San Diego Water Board's economic analysis of the most reasonably foreseeable methods of compliance that a discharger may use to ensure compliance with the proposed groundwater quality objective for nitrate.

Legal Requirement for Economic Analysis

The CEQA has specific provisions governing the San Diego Water Board's adoption of regulations such as the regulatory provisions of Basin Plans that establish "performance standards" or treatment requirements.[26] These provisions require that the San Diego Water Board perform an environmental analysis of the reasonably foreseeable methods of compliance prior to the adoption of the basin plan amendment. The San Diego Water Board must consider the economic costs of the methods of compliance in this analysis.[27] The proposed amendment includes changing the groundwater quality objective for nitrate to 45 mg/L as NO_3. The San Diego Water Board is therefore required to evaluate economic considerations pursuant to Water Code section 13241.

The most reasonably foreseeable methods of compliance that dischargers may use to ensure compliance with the groundwater quality objective for nitrate are management measures and/or non-structural and/or structural controls to minimize or eliminate the discharge of pollutants to waters of the state.

Project Implementation Costs

The specific controls to be implemented will be chosen by the dischargers. All costs are preliminary estimates because particular elements of a control, such as type, size, and location,

[26] Pub. Res. Code §§ 21159 and 21159.4.
[27] See Public Resources Code section 21159, subdivision (c).

would need to be developed to provide a basis for more accurate cost estimations. Identifying the specific controls that dischargers will choose to implement is speculative at this time and the controls presented in this section serve only to demonstrate potential costs. Therefore, this section discloses typical costs of the reasonably foreseeable controls discussed in section I.

Cost Estimates of Reasonably Foreseeable Controls

Approximate costs associated with reasonably foreseeable non-structural and structural controls that might be implemented in order to comply with the Amendment are discussed below. The controls are divided into non-structural and structural classes.

Non-Structural Controls

Most non-structural controls are not expected to increase the cost of a project. Costs associated with non-structural controls such as proper waste management, facility inspection and maintenance, and design, sizing and location of facilities should be included in project implementation and facility operations.

For non-structural controls such as facility management plans, a discharger may prepare such a document on their own, or employ the services of a consultant. Estimated costs for preparing facility management plans may range from nothing, if prepared by the discharger without any outside services, to several thousand dollars, depending on the size of the facility.

For non-structural controls such as education, information is available from numerous sources that are free to the public. Dischargers may also choose to attend workshops or classes to learn more about proper management of wastes. Estimated costs for education may range from nothing, if a discharger uses publicly available educational materials, to a few hundred dollars, depending on the types and number of workshops or classes attended.

Structural Controls

Use of Advanced Onsite Wastewater Treatment Systems: In some cases, use of advanced OWTS may be necessary to ensure discharges of treated wastewater from residences and commercial and industrial establishments do not adversely affect water quality or cause concentrations of nitrate in groundwater to exceed 45 mg/L as NO_3. The County DEH's LAMP currently specifies that OWTS receiving a projected flow over 3,500 gallons per day must either utilize an advanced OWTS certified by the NSF or a third party tester as capable of achieving 50 percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the County DEH completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.

The costs of an advanced OWTS considerably exceeds that of a convectional septic tank-leach field system. Generally, a conventional OWTS for a three bedroom home with 2 bathrooms is expected to cost approximately $10,000, including design and construction (State Water Board, 2012b). The cost for an advanced OWTS for the same type of home using supplemental treatment is expected to cost approximately $26,000 in addition to the leach field cost. The cost of an advanced OWTS that meets Tier 3 requirements in the OWTS Policy for supplemental treatment for a school serving 716 students and including 34 faculty and 11 administrators and staff, is estimated at over $560,000 (State Water Board, 2012b). The cost of an advanced OWTS that meets Tier 3 requirements for supplemental treatment for a restaurant serving 213 meals per day is estimated at over $151,000 (State Water Board, 2012b). After reviewing some of these technologies, State Water Board staff has estimated operational costs for advanced OWTS ranges from $44 to $336 per year depending on the system.

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APPENDIX A- ENVIRONMENTAL CHECKLIST

Table of Contents

A. PROJECT TITLE:

Basin Plan Amendment Incorporating the State Board Onsite Wastewater Treatment Systems Policy, Changing the Nitrate Water Quality Objective for Groundwater, and Making Other Updates

B. LEAD AGENCY NAME AND ADDRESS:

California Regional Water Quality Control Board, San Diego Region
2375 Northside Drive, Suite 100**,** San Diego, CA 92108-2700

C. LEAD AGENCY CONTACT PERSON:

Mr. Fisayo Osibodu
California Regional Water Quality Control Board, San Diego Region
Groundwater Protection Branch
2375 Northside Drive, Suite 100**,** San Diego, CA 92108-2700
619-521-8036
Olufisayo.Osibodu@waterboards.ca.gov

D. PROJECT LOCATION AND SURROUNDING LAND USES:

The San Diego Region forms the southwest corner of California and occupies approximately 3,900 square miles. The western boundary of the Region consists of the Pacific Ocean coastline. The northern boundary of the Region is formed by the hydrologic divide starting near Laguna Beach and extending inland through El Toro and easterly along the ridge of the Elsinore Mountains into the Cleveland National Forest. The eastern boundary of the Region is formed by the Laguna Mountains and other lesser known mountains located in the Cleveland National Forest. The southern boundary of the Region is formed by the United States-Mexico international border.

The San Diego Region encompasses most of San Diego County, parts of southwestern Riverside County, and southwestern Orange County. The Region is divided into a coastal plain area, a central mountain-valley area, and an eastern mountain-valley area. It consists of eleven hydrologic units that ultimately drain to the Pacific Ocean. The climate in the Region is generally mild with annual temperatures averaging around 65°F near the coastal areas. Average annual rainfall ranges from 9 to 11 inches along the coast to more than 30 inches in the eastern mountains. There are two distinct seasons in the Region. Summer dry weather occurs from late April to mid-October. During this period almost no rain falls. The winter season (mid-October through early April) consists of generally dry weather interspersed with occasional rain storms. Eighty-five to 90 percent of the annual rainfall occurs during the winter season.

The land use of the San Diego Region is highly variable. The western coastline areas are highly developed with urban and residential land uses, and the inland areas primarily consist of open space. The predominant land uses in the Region are open space or recreational land use, followed by low-density residential and agriculture/livestock land uses. Other major land uses are commercial/institutional, high-density residential, industrial/transportation, military, and transitional.

E. PROJECT DESCRIPTION/DESCRIPTION OF PROPOSED ACTIVITY

The Basin Plan designates beneficial uses of water bodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed project is to amend the Basin Plan as follows:

1. Revise provisions of Chapter 4 (implementation chapter) regarding regulation of OWTS and incorporates the OWTS Policy into the Basin Plan.

2. Revise Chapter 3 to change the groundwater quality objective for nitrate in all the hydrologic areas/subareas in the Region except the Warner Valley Hydrologic Area to the state MCL for drinking water of 45 mg/L as NO_3.

3. Revises Chapter 4 to add implementation provisions for the nitrate groundwater quality objective to protect surface water quality where groundwater and surface water are interconnected.

4. Revise Chapter 5 to include descriptions of the State Water Board Policies for OWTS (2012) and Recycled Water (2009, as amended in 2013).

5. Delete the expired conditional waivers of waste discharge requirements from the Basin Plan and makes other non-substantive changes to the Basin Plan.

The proposed basin plan amendment incorporates the OWTS Policy into the Basin Plan, and amends the criteria to be used by the San Diego Water Board and local agencies to regulate OWTS in the San Diego Region. The OWTS Policy also provides a waiver of the requirement to obtain WDRs for those OWTS that are in compliance with the applicable Tier requirements specified in the OWTS Policy.

The Basin Plan (Chapter 3) establishes groundwater quality objectives for nitrate in regional groundwater resources with designated beneficial uses. Groundwater quality objectives for nitrate throughout the San Diego Region are established at 5, 10, 15, or 45 mg/L as NO_3. Discharges of wastes that contribute nitrate to groundwater include discharges from OWTS, discharges from wastewater treatment plants, fertilizer application on agricultural operations and

on landscape, application of manure at animal operations, and landscape irrigation using potable water, groundwater, or recycled water. The San Diego Water Board typically specifies effluent discharge specifications for nitrate or total nitrogen at or below the applicable basin plan water quality objective for discharges from wastewater treatment plants or water reclamation facilities using treated effluent for irrigation; or disposing of effluent via percolation basins. Discharge specifications can be set at levels less stringent than water quality objectives if a mass balance analysis shows that nitrate concentrations in effluent will be diluted through rainfall recharge, or nitrate will be removed through denitrification processes in the soil, or through uptake by vegetation.

F. ENVIRONMENTAL IMPACTS:

This project may potentially affect the following checked environmental factors. See the checklist on the following pages for more details.

- ☐ Aesthetics
- ☐ Agriculture and Forestry Resources
- ☐ Air Quality
- ☐ Biological Resources
- ☐ Cultural Resources
- ☐ Geology/Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards & Hazardous Materials
- ☐ Hydrology/Water Quality
- ☐ Land Use/Planning
- ☐ Energy and Mineral Resources
- ☐ Noise
- ☐ Population/Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation/Traffic
- ☐ Utilities/Service Systems
- ☐ Mandatory Findings of Significance

Section 1. **AESTHETICS.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

DISCUSSION

a) **No impact**. Management measures and reasonable non-structural and/or structural controls would not be of the size or scale that would result in the obstruction of the view of a scenic vista, substantially damage scenic resources, degrade the existing visual character or quality of a site or its surroundings, or create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

b) **No impact**. See response to section I.1.a above.

c) **No Impact**. See response to section I.1.a above.

d) **No Impact**. See response to section I.1.a above.

Section 2. **AGRICULTURAL AND FOREST RESOURCES.** In determining whether impacts to agricultural resources are significant environmental impacts, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are

significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land [as defined in PRC section 12220(g)] or timberland (as defined by PRC section 4526)?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in conversion of farmland to non-agricultural uses.

b) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to affect zoning designations established by local land use jurisdictions.

c) **No Impact**. See response to section I.2.b above.

d) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in conversion of Farmland to non-agricultural use, or conversion of forest land to non-forest use.

e) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

Section 3. **AIR QUALITY.** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in obstruction of an applicable air quality plan.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in substantial air emissions or deterioration of air quality, or result in obstruction of an applicable air quality plan.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in substantial air emissions or deterioration of air quality, or result in exposure of sensitive receptors to substantial pollutant concentrations.

d) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in substantial air emissions or deterioration of air quality, or result in a considerable net increase of any criteria pollutants.

e) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural controls could result in the creation of objectionable odors if animal wastes and/or compost are stored at a facility. However, proper storage, use and management of such

wastes would minimize or eliminate such odors. In rural areas, the number of persons that may be affected and consider it a nuisance would likely be very low. In urban areas, storage and use of such wastes are expected to be on small scales, which would have a less than significant effect on the environment.

Construction and installation of structural controls may result in objectionable odors in the short-term due to exhaust from construction equipment and vehicles, but no more so than during typical construction activities currently performed. Structural controls may be a source of objectionable odors if structural control designs allow for water stagnation or collection of water with sulfur-containing compounds. Storm water run-on is not likely to contain sulfur-containing compounds, but stagnant water could create objectionable odors. However, reasonably foreseeable structural controls are not expected to be on a scale large enough that would result in the significant creation of objectionable odors.

Section 4. **BIOLOGICAL RESOURCES.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (DFW) or United States Fish and Wildlife Service (USFWS)?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the DFW or USFWS?	☐	☐	☒	☐

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, *etc.*) through direct removal, filling, hydrological interruption or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

a) **Less than Significant Impact**. Implementing management measures and non-structural and/or structural controls will not directly result in substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the DFW or USFWS, because most of these controls would not introduce any physical effects that could impact these characteristics.

b) **Less than Significant Impact**. Implementing management measures and non-structural and/or structural controls will not directly result in a substantial adverse effect on any riparian

habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the DFW or USFWS because the measures or controls would not introduce any physical effects that could impact these characteristics.

c) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in direct removal or filling of riparian habitat, wetlands, or any sensitive natural communities.

d) **Less than Significant Impact**. Implementing management measures and non-structural and/or structural controls will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites because the measures or controls would not introduce any physical effects that could impact these characteristics.

Implementing management measures and non-structural and/or controls would not foreseeably introduce new species. Construction of reasonably foreseeable structural controls likely would not restrict wildlife movement because the sizes of structural controls are generally too small to obstruct a corridor. For terrestrial animals, corridors would be maintained regardless of stream flow as reduced flows would not cause physical barriers for these animals. Projects that may implement structural controls are not expected to be of the size or scale that could result in a significant introduction of new species of animals into an area, or in a barrier to the migration or movement of animals.

e) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) **No Impact**. See responses to sections I.4.a through I.4.e above.

Section 5. **CULTURAL RESOURCES.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Calif. Code Regs. title 14 section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in Calif. Code Regs. title 14 section15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in a substantial adverse change in the significance of a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains.

b) **No Impact**. See response to section I.5.a above.

c) **No Impact**. See response to section I.5.a above.

d) **No Impact**. See response to section I.5.a above.

Section 6. **GEOLOGY and SOILS.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication No. 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

DISCUSSION

a) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in exposure of people or structures to geologic hazards because none of these controls would result in earth moving activities. This also response applies to sub-issue sections I.6.a.i through I.6.a.iv.

b) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a large enough scale that would result in increase in wind or water erosion of soils, either on or off site because none of the non-structural controls would result in increased surface runoff discharge, or in exposing soils to erosion by wind and water.

Depending on the structural controls selected, the proposal may result in minor soil excavation during construction of structural controls. However, construction related erosion impacts will cease with the cessation of construction. Wind or water erosion of soils may occur as a potential short-term impact. Typical established MMs/BMPs should be used during implementation to minimize offsite sediment runoff or deposition. Construction sites are required to retain sediment on site, both under general construction storm water WDRs and through the construction program of the applicable municipal separate storm sewer systems (MS4) WDRs; both of which are already designed to minimize or eliminate erosion impacts on receiving waters. Projects that may implement structural controls are not expected to be of the size or scale that could result in significant erosion of soils, either on or off the site.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls will not be located in unstable geologic units and are not expected to be on

a scale large to potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. In addition, see response to section I.6.a above.

d) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls will not be located in unstable geologic units and are not expected to be on a scale large to potentially result in loss of life or property resulting from soil expansion. In addition, see response to section I.6.a above.

e) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls will not directly or indirectly result in siting of septic tanks or alternate wastewater disposal systems in soils incapable of adequately supporting their use. The Basin Plan incorporates the State Water Board OWTS Policy. Design and siting criteria for OWTS and dispersal systems are prescribed in the State Water Board OWTS Policy. Environmental impacts from implementation of the OWTS Policy's design and siting criteria are addressed in the SED that was prepared for the OWTS Policy.

Section 7. **GREENHOUSE GAS EMISSIONS.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

DISCUSSION

a) **Less than Significant Impact**. Construction and installation of structural controls may result in generation of greenhouse gases in the short-term due to exhaust from construction equipment and vehicles, but no more so than during typical construction activities currently performed. These reasonably foreseeable structural controls, however, are not expected to be on a scale large enough that would result in the significant generation of greenhouse gases.

b) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls are not expected to be on a scale large enough that would result in conflict with any applicable plan, policy or agency adopted regulation for the purpose of reducing the emissions of greenhouse gases.

Section 8. **HAZARDS and HAZARDOUS MATERIALS.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☐	☐	☐	☒
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and structural controls are not expected to be of a large enough scale that would create a significant hazard to the environment from transport or disposal of hazardous substances (including, but not limited to: oil, pesticides, chemicals, or radiation).

b) **Less than Significant Impact.** Management measures and reasonably foreseeable non-structural and structural controls (including, but not limited to: oil, pesticides, chemicals or radiation) as a result of a reasonably foreseeable upset or accident conditions. The reasonably foreseeable non-structural and structural BMPs included in this evaluation would not cause the release of hazardous substances in the event of an accident because these types of substances would not be present.

c) **No Impact.** Management measures and reasonably foreseeable non-structural and structural controls will not involve emission or handling of hazardous substances or waste**.** In addition the waiver conditions would not induce a project that would involve emission or generation of hazardous wastes. However, individual projects would be required to obtain any necessary permits from the appropriate public or government agencies, and in compliance with CEQA evaluate impacts from hazards and hazardous materials.

d) **No Impact.** Management measures and reasonably foreseeable non-structural and structural controls will not result in a safety hazard to people working or residing within an area within an airport land use area, two miles of an airport, or a private airstrip. In addition the waiver conditions would not induce a project that would be located within an airport land use plan. However, individual projects would be required to obtain any necessary permits from the appropriate public or government agencies, and in compliance with CEQA evaluate impacts from hazards and hazardous materials.

e) **No Impact.** See response to section I.8.d above.

f) **No Impact.** See response to section I.8.d above.

Section 9. **HYDROLOGY and WATER QUALITY.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) 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 (*e.g.*, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) 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?	☐	☐	☒	☐

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the 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?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) 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?	☐	☐	☐	☒
h) Place housing within a 100-year flood hazard area structures which would impede or redirect flows?	☐	☐	☐	☒
i) 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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

DISCUSSION

a) **Less than Significant Impact**. The proposed project/basin plan amendment, in itself, would not directly result in potential water quality impacts, but non-structural and/or structural controls that promote or utilize infiltration of surface runoff may locally increase the quantity

and/or minimally degrade the quality of groundwaters. The increase in localized quantity of surface runoff is unlikely to have any adverse effects since, under pre-development conditions, infiltration rates of storm water runoff to groundwater were most likely much higher than they are today due to the absence of hardscapes. Additionally, implementation of management measures and non-structural and structural controls may lead to improvements of groundwater quality and surface water quality over time.

Individual discharges applying for WDRs will be required to demonstrate that their proposed discharges comply with water quality objectives and applicable State and Regional Board policies (such as the State Antidegradation and Recycled Water Policies). WDRs issued by the San Diego Water Board will require application of recycled water at agronomic rates[28]. Dischargers shall also consider soil types, climate, and plant demand in application of recycled water. Nitrogen in recycled water applied to crops or landscape will be taken up by the plants, lost to the atmosphere through volatilization of ammonia or denitrification, or stored in the soil matrix. As a result, nitrogen increases are unlikely to impair an existing and/or potential beneficial use of groundwater. To the extent use of recycled water may result in a discharge to a groundwater basin that contains high quality water, individual WDRs will require that the discharge of recycled water complies with the Antidegradation Policy. In addition, Salt and Nutrient Management Plans, developed in accordance with the Recycled Water Policy, will require analysis on an ongoing basis to evaluate nitrate inputs to the basin, and available assimilative capacity of the basin.

In addition, the basin plan amendment adds implementation measures to Chapter 4 of the Basin Plan to ensure protection of water quality and beneficial uses in areas where groundwaters and surface waters are connected. For example, Reports of Waste Discharge for a new/proposed wastewater treatment system discharge that doesn't qualify for the OWTS waiver must include a nitrate study. The purpose of the nitrate study is to provide the San Diego Water Board with the information needed to establish discharge specifications for total nitrogen concentrations in effluent that will not cause the water quality objective for total nitrogen to be exceeded in any surface water body interconnected with receiving groundwater.

Implementation measures are also included as part of the basin plan amendment to address discharges from agricultural and nursery operations and from landscape irrigation operations with recycled water to ensure these discharges do not adversely affect groundwater or surface water quality.

[28]Refers to the rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.

b) **No Impact**. Non-structural and/or structural controls that promote or utilize infiltration of surface runoff may have localized effects on groundwaters quantity. Localized effects may include increases rather than decreases in groundwater supply. Therefore, the potential increase in quantity is not expected to have any adverse effects on groundwater recharge or lead to the lowering of groundwater levels.

c) **Less than Significant Impact**. Structural and non-structural controls would not be of the size or scale to result in significant changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff.

d) **Less than Significant Impact**. Management measures and non-structural controls would not result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff because none of these controls would introduce any physical effects that could impact these characteristics.

Depending on the structural controls selected, absorption rates, drainage patterns, and surface water runoff conditions may change. Grading and excavation during construction and installation of structural controls could result in alterations in absorption rates, drainage patterns, and surface water runoff. Some structural controls collect and/or inhibit surface water runoff flow, which would likely alter drainage patterns, and also decrease the rate and amount of surface water runoff. For example, structural controls such as riparian buffer zones would change drainage patterns by increasing absorption rates, which would reduce the amount of surface water runoff to creeks. Projects that may implement structural controls are not expected to be of the size or scale that could result in significant changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff.

e) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

f) **Less than Significant Impact**. See response to section I.9.a above.

g) **No Impact**. The project does not entail construction of new housing. Any housing or construction project would have to prepare a separate project level CEQA analysis for the construction project which must evaluate impacts to hydrology and water quality, and obtain any necessary permits from the appropriate public or government agencies (e.g., building permits, clearing and grading permits, or permits under the Federal Clean Water Act, etc) to the extent required.

h) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls that would place housing in a 100-year flood hazard area. In addition see response to section I.9.g above.

i) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in exposure of people or property to water related hazards such as flooding.

j) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in exposure of people or property to water related hazards such as inundation by seiche, tsunami, or mudflow.

Section 10. **LAND USE AND PLANNING.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in physical division of a community.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls to result in conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in Conflict with any applicable habitat conservation plan or natural community conservation plan.

Section 11. **MINERAL RESOURCES**. Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in loss of availability of a known mineral resource.

b) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale to result in loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Section 12. **NOISE.** Would the project result in:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☐	☒	☐

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable

standards of other agencies. None of these controls would introduce any physical effects that could impact these characteristics.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls non-structural and/or structural controls would not result in exposure to, or generation of, excessive groundborne vibration or groundborne noise levels because the controls would not introduce any physical effects that could impact these characteristics.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not result in a substantial permanent increase in ambient noise levels in the project vicinity because the controls would not introduce any physical effects that could impact these characteristics.

d) **Less than Significant Impact**. The construction and installation of structural controls could result in minimal temporary increases in existing noise levels, but any impacts are expected to be short term, localized impacts that would exist only in close proximity to the construction area. The type and duration of noise impacts due to installation of any structural controls are not expected to be significant.

e) **Less than Significant Impact**. See response to section I.12.d above.

f) **Less than Significant Impact**. See response to section I.12.d above.

Section 13. **POPULATION AND HOUSING.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area either directly (*e.g.*, by proposing new homes and businesses) or indirectly (*e.g.*, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

a) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would alter the location, distribution, density, or growth rate of the human population of an area.

The proposed action to change the nitrate groundwater quality objective to 45 mg/L as NO_3 is not expected to increase development pressures in areas where soil conditions may be particularly well suited for installation of OWTS (e.g., high-quality agricultural lands). Similarly, local jurisdictions may annex land (e.g., rural agricultural and open space lands) to increase developable areas, changing population growth within local communities. Such actions in themselves would be considered discretionary actions subject to environmental review under CEQA. Such proposals would also be subject to review by neighboring jurisdictions and possibly subject to approval by an applicable Local Agency Formation Commission.

Potential suitability of soils and other requirements in the Basin Plan or OWTS Policy for installation of OWTS would not drive decisions by local governing bodies to pursue annexation of lands at the fringe of developed areas. Rather, local governing bodies would be required to weigh far-reaching variables related to growth and development. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions.

Land use planning functions are carried out by local jurisdictions through State of California planning laws. Of those laws that provide the basis for local jurisdictions to govern development within communities, the general plan (Government Code Section 65300 et seq.) and state zoning law (Government Code Section 65800 et seq.) are of primary use to cities

and counties working to direct the type, location, and intensity of growth in an area or region. The proposed basin plan amendment would not affect the authority or purpose of state planning law, nor would it affect the land use planning processes of local governing bodies that are undertaken in accordance with state planning law. The proposed basin plan amendment would not enable development to occur in places other than where it is allowed by applicable local agencies. For these reasons, the impact of this issue is considered less than significant.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would displace substantial numbers of people or housing necessitating the construction of replacement housing elsewhere.

c) **No Impact**. See response to section I.13.b above.

Section 14. **PUBLIC SERVICES.** Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a need for new or altered fire protection services, police protection services, schools, parks, or other public facilities.

b) **No Impact**. See response to section I.14.a above.

c) **No Impact**. See response to section I.14.a above.

d) **No Impact**. See response to section I.14.a above.

e) **No Impact**. See response to section I.14.a above.

Section 15. **RECREATION.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

a) **No Impact.** Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in an increase in use of existing neighborhood and regional parks or other recreational facilities; nor would the controls be of the size or scale to cause substantial physical deterioration of recreational facilities because need for new or altered fire protection services, police protection services, schools, parks, or other public facilities.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would include or require construction or expansion of recreational facilities.

Section 16. **TRANSPORTATION / TRAFFIC.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in exceeding capacity of the existing circulation system.

b) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in conflict with an applicable congestion management plan.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a change to air traffic patterns, or alterations to air traffic.

d) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in substantial increase in hazards due to a design feature due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

e) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in inadequate emergency access.

f) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a conflict with adopted policies, plans, or programs supporting alternative transportation.

Section 17. **UTILITIES AND SERVICE SYSTEMS.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

DISCUSSION

a) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b) **Less than Significant Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a need for wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts. However, construction of new water reclamation plants, or expansion of existing water reclamation plants, may result in increased recycled water discharges for irrigation, which may be regulated by adopted waste discharge or reclamation requirements, or waiver of waste discharge requirements. Any wastewater or recycled water projects requiring the issuance of waste discharge or reclamation requirements would require project level CEQA review, at which time potential adverse impacts and appropriate mitigation measures will be evaluated and implemented.

c) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in the construction of new storm water drainage facilities or expansion of existing facilities.

d) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a substantial increase in water use, or result in the need for new or substantial alterations to water supplies.

e) **Less than Significant Impact**. See response to section I.17.b above.

f) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in a construction of new landfills or expansion of existing landfills.

g) **No Impact**. Management measures and reasonably foreseeable non-structural and/or structural controls would not be of the size or scale that would result in violation of federal, state, and local statutes related to solid waste.

Section 18. **MANDATORY FINDINGS OF SIGNIFICANCE.** Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☒	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION

a) **Less than Significant Impact**. Projects that may implement non-structural and/or structural controls are not expected to be of the size or scale that could degrade the environment or result in significant changes that could have an adverse effect on native plant and animal species.

b) **Less than Significant Impact**. Cumulative impacts, defined in section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the potential impacts associated with implementing projects to comply with the basin plan amendment, but also the impacts from other basin plan amendment, municipal, and private projects, which have occurred in the past, are presently occurring, and may occur in the future, during the period of implementation.

The dischargers may opt to use structural controls to minimize or eliminate the transport of pollutants to the waters of the state. Present and future specific projects and other construction activities may result in short-term cumulative impacts. The construction of structural controls, along with other construction and maintenance projects, could have short-

term cumulative effects. However, these effects are not cumulatively considerable in the long-term because they are not permanent. The effects will cease with the completion of construction.

c) **Less than Significant Impact**. Management measures and reasonably foreseeable and properly implemented non-structural and/or structural controls would not be of a size or scale that would cause substantial adverse effects on human beings, either directly or indirectly.

G. PRELIMINARY STAFF DETERMINATION

On the basis of this initial evaluation:

☒	The proposed project COULD NOT have a significant effect on the environment, and therefore, no alternatives and mitigation measures are proposed.
☐	The proposed project MAY have a significant or potentially significant effect on the environment, and therefore the alternatives and mitigation measures have been evaluated.