

# **SAN GABRIEL VALLEY GROUNDWATER BASIN SALT AND NUTRIENT MANAGEMENT PLAN**

***DRAFT SUBSTITUTE ENVIRONMENTAL DOCUMENT***

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Main San Gabriel Basin  
**WATERMASTER**

MAY 2016  
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**STETSON ENGINEERS INC.**

861 VILLAGE OAKS DRIVE – COVINA, CALIFORNIA 91724

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# SECTION I INTRODUCTION

## I.1 BACKGROUND

In February 2009, the State Water Resources Control Board of the State of California (State Water Board or SWRCB) approved the Resolution No. 2009-0011 to adopt the Recycled Water Policy (Policy) to encourage the use of recycled water from municipal wastewater sources as a safe alternative source of water supply while complying with the Resolution No. 68-16 to “*achieve highest water quality consistent with maximum benefit to the people of the State.*” The goal of this Policy is to increase the use of recycled water over 2002 levels by at least one million acre-feet per year (af/yr) by 2020 and at least two million af/yr by 2030. Recognizing that some groundwater basins in the state contain salt and nutrients that exceed or threaten to exceed water quality objectives (WQOs) established in the Water Quality Control Plans (Basin Plans), and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the WQOs for salt and nutrients, the State Water Board determined the appropriate way to address salt and nutrient issues is through the development of regional or sub-regional salt and nutrient management plans (SNMPs) rather than through imposing requirements solely on individual recycled water projects.

This Substitute Environmental Document (SED) is prepared to satisfy the California Environmental Quality Act (CEQA) requirements for the San Gabriel Groundwater Basin (San Gabriel) SNMP. The SED evaluates potential cumulative impacts to groundwater quality due to the implementation of proposed projects and programs developed and presented in the SNMP to manage salt and nutrients on a sustainable basis. The SED will be considered by the Regional Water Quality Control Board – Los Angeles Region (RWQCB or LARWQCB) as part of the adoption of the implementation provisions contained in the SNMP. The San Gabriel SNMP was developed by the Main San Gabriel Basin Watermaster (Watermaster) in conjunction with primary stakeholders consisting of the Upper San Gabriel Valley Municipal Water District (Upper District), San Gabriel Valley Municipal Water District (San Gabriel District), Three Valleys Municipal Water District (Three Valleys), The Metropolitan Water District of Southern California (MWD), Los Angeles County Sanitation Districts (LACSD), and the Los Angeles County Department of Public Works (LACDPW).

Section 6(b) of the Recycled Water Policy notes that SNMPs are to comply with CEQA. The basin planning process is certified by the Secretary for Natural Resources as a regulatory program exempt from the requirements to prepare an Environmental Impact Report, Negative Declaration, and Initial Study (Title 14, California Code of Regulations (CCR), Section 15241(g)). However, a certified program is subject to

other provisions in CEQA (Pub. Resources Code, Section 21000 et seq.), such as the requirement to avoid significant adverse effects to the environment where feasible. The RWQCB is required to comply with State Water Board regulations set forth in California Code of Regulations, Title 23, sections 3775 et. seq, and Public Resources Code section 21159.

The SED is organized as follow:

- Section I - Introduction
- Section II – Regulatory Requirements
- Section III – Environmental Setting
- Section IV – Implementation Measures
- Section V – Program Alternatives
- Section VI – Environmental Analysis
- Section VII – Determination
- Section VIII – References

## **I.2 PROJECT DESCRIPTION**

The proposed San Gabriel SNMP, covering the regions of the San Gabriel Valley Groundwater Basin, as identified in the Main San Gabriel Basin Judgment, is intended to fulfill the requirements of the Recycled Water Policy in order to establish a framework for the management of salts and nutrients in the Basin, including those resulting from increased recycled water use. Likewise, the purpose of this SED is to satisfy the CEQA requirements for the San Gabriel SNMP. CEQA requirement are discussed further in Section II.5.

### **I.2.1 Lead Agency**

The CEQA lead agency is the RWQCB, Los Angeles Region, who has worked in conjunction with Watermaster, who represents the stakeholders in the San Gabriel Valley Groundwater Basin.

Address:

Regional Water Quality Control Board, Los Angeles Region  
320 West Fourth Street, Suite 200  
Los Angeles, CA 90013

### **I.2.2 Program Stakeholders**

In addition to the Watermaster (and the groundwater producers it represents), the primary program stakeholders are those entities that may contribute to salt and nutrient loading and unloading within the Basin. The stakeholders are as follows:

- Upper San Gabriel Valley Municipal Water District
- Three Valleys Municipal Water District
- San Gabriel Valley Municipal Water District
- Metropolitan Water District of Southern California
- Los Angeles County Sanitation Districts
- Los Angeles County Department of Public Works

Watermaster has represented the stakeholders for the SNMP and CEQA processes.

### **I.2.3 Salt and Nutrient Management Plan Characteristics**

The San Gabriel SNMP contains the following plan characteristics as required by the Policy. The reports sections in the SNMP where these characteristics can be found are included after each.

- Basin Wide Monitoring Plan (Chapter V)
- Monitoring of Constituents of Emergency Concern (Chapter V)
- Source Identification/Source Loading and Assimilative Capacity Estimates (Chapter III.5)
- Consideration of Water Recycling/Stormwater Recharge/Use (Chapter III.5.3)
- Implementation Measures (Chapter III.6)
- Anti-Degradation Analyses (Chapter IV)

## **I.3 PROGRAM OBJECTIVES**

The primary goal of the San Gabriel SNMP is to assist Watermaster and participating/potential stakeholders to comply with the Policy regarding the use of the recycled water from municipal wastewater treatment facilities as a safe source of water supply, while maintaining the WQOs for salt and nutrients in the Basin Plan established by the LARWQCB. The goal of the Policy is to increase the use of recycled water over 2002 levels by at least one million acre-feet per year (af/yr) by 2020 and at least two million af/yr by 2030. The primary objective of the San Gabriel SNMP is to comply with the specific requirements

described in the Policy, as discussed in Section IV.1.3. The objective of this SED is to fulfill the CEQA requirements for the implementation of the SNMP.

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## SECTION II REGULATORY REQUIREMENTS

The San Gabriel SNMP is required to be in compliance with CEQA guidelines to determine the potential environmental impacts and potential mitigation measures to reduce impacts. The California Secretary for Natural Resource has specifically exempted SNMPS from certain CEQA requirements including the preparation of an initial study and the preparation of a negative declaration or Environmental Impact Report (EIR). However, a SED involves program level analysis and must include an alternatives analysis, identification of mitigation measures, and an environmental checklist.

This section presents the regulatory requirements for assessing the potential environmental impacts associated with the proposed implementation measures and major recycled water projects identified in the SNMP.

### II.1 RECYCLED WATER POLICY

The SWRCB adopted Resolution No. 2009-0011, *Policy for Water Quality Control for Recycled Water* (Recycled Water Policy) in February 2009. The Recycled Water Policy was amended to include the monitoring requirements for priority pollutants and Constituents of Emerging Concern (CECs), by Resolution No. 2013-0003, which was adopted by the SWRCB on January 22, 2013, and became effective on April 25, 2013. The Recycled Water Policy, as amended, is included as Attachment A.

The goals of the Recycled Water Policy are to increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AFY) by 2020, and at least two million AFY by 2030. Recognizing some groundwater basins in the State of California contain salt and nutrients which exceed or threaten to exceed WQOs established in Water Quality Control Plans (Basin Plans), and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the WQOs for salt and nutrients, the State Water Board determined the appropriate way to address salt and nutrient issues is through the development of regional or sub-regional SNMPS, rather than through imposing requirements solely on individual recycled water projects.

The RWQCBs act as an overseer and facilitator of the SNMP development process. LARWQCB staff have attended stakeholder meetings for various groundwater basin/sub-basin groups to provide support and information. In the San Gabriel Valley Groundwater Basin, the Watermaster is the lead agency for the development of the SNMP for the Basin (San Gabriel SNMP). Watermaster staff has coordinated closely with the RWQCB staff on the development progress and the contents of the San Gabriel SNMP.

## II.2 LARWQCB GUIDANCE

The development of the San Gabriel SNMP and this SED considers the document entitled “*Regional Water Board Assistance in Guiding Salt and Nutrient Management Plan Development in the Los Angeles Region*” (Guidance). The final Guidance, which was dated June 28, 2012, is included as Attachment B. The purpose of the Guidance is to provide information and guidance to assist with aspects of the SNMP development ensure the final product is compliant with the specific requirements of the Recycled Water Policy as well as state and federal water quality laws. The Guidance also outlines the CEQA requirements for LARWQCB adoption of an implementation plan, included in the San Gabriel SNMP, into its Basin Plan.

## II.3 CEQA

In compliance with CEQA, the potential significant environmental impacts of proposed projects and respective measures to avoid or mitigate these impacts where feasible are identified. Section 3 of the Policy states, “*the State Water Board finds that the use of recycled water in accordance with this Policy, that is, which supports the sustainable use of groundwater and/or surface water, which is sufficiently treated so as not to adversely impact public health or the environment and which ideally substitutes for use of potable water, is presumed to have a beneficial impact. Other public agencies are encouraged to use this presumption in evaluating the impacts of recycled water projects on the environment as required by [CEQA].*”

The basic purposes of CEQA, as outlined in the Guidance, are the following:

- (1) Inform decision makers and public about the potential significant environmental effects of a proposed project;
- (2) Identify ways that environmental damage may be mitigated;
- (3) Prevent significant, avoidable damage to the environment by requiring changes in projects, through the selection of alternative projects or the use of mitigation measures when feasible; and
- (4) Disclose to the public why an agency approved a project if significant effects are involved (CCR Title 14, Section 15002(a)).

As stated in the Guidance, the California Secretary for Natural Resources has certified the State and RWQCB's basin planning process ("Certified Regulatory Program") as exempt from certain CEQA requirements, specifically the preparation of an initial study, negative declaration, and environmental impact report (CCR Title 14, Section 15251(g)). However, a Certified Regulatory Program remains subject to other CEQA provisions, such as the requirement to avoid significant adverse effects to the environment where feasible.

## **II.4 EXEMPTION FROM CERTAIN CEQA REQUIREMENTS**

A proposed amendment to the Basin Plan is part of the basin planning process of the Water Boards, i.e. both SWRCB and RWQCBs. The California Secretary for Natural Resources had certified that the basin planning process is exempt from certain CEQA requirements, including preparation of an initial study, negative declaration, or environmental impact report (CCR, Title 14, Section 15251(g)). However, as a Certified Regulatory Program, the basin planning process remains subject to other provisions of CEQA, such as the requirement to avoid significant adverse effects on the environment where feasible (CCR, Title 14, Section 15250). This SED is the substitute for the initial study, negative declaration, and environmental impact report and, as required, includes a description of the proposed activity, identification of potentially significant effects on the environment (if any), and identification of alternatives to the activity or mitigation measure to avoid or reduce potentially significant effects on the environment (CCR, Title 23, Section 3777(a)). The LARWQCB is required to comply with the SWRCB regulations set forth in CCR, Title 23, Sections 3775 et. seq., and California Public Resources Code (PRC) Section 21159.

## **II.5 CALIFORNIA CODE OF REGULATIONS, AND PUBLIC RESOURCES CODE REQUIREMENTS**

### **II.5.1 California Code of Regulations**

Title 23, Section 3777(a) requires a written report detailing the proposed activity, analysis of reasonable alternatives, and identification of mitigation measures to minimize any significant adverse environmental impacts for a "Certified Regulatory Program". Section 3777(a) also requires completion of an Environmental Checklist. The LARWQCB is required to comply with the SWRCB regulations set forth in CCR Title 23, Sections 3775 et. Seq,

As defined in CCR Title 40, Sections 130.2(k) and 130.6, an SED must be prepared for any water quality control plan, state policy for water quality control, or any other components of the state's water

quality management plan proposed for RWQCB approval or adoption, and supported by substantial evidence in the administrative record. An SED may be comprised of a single document or a compilation of documents. The SED must be circulated prior to RWQCB approval or adoption of a project as specified in CCR Title 23, Sections 3778 and 3779. An SED is a written report containing an environmental analysis of the proposed project, a completed environmental checklist, and other documentation the RWQCB deems necessary. A SED must include the following information:

- Brief Description of the proposed project;
- Identification of any significant or potentially significant adverse environmental impacts of the proposed project;
- Analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts; and
- Environmental analysis of the reasonably foreseeable methods of compliance with the project.

### II.5.2 Environmental Analysis

The environmental analysis is to include, at a minimum, the following:

- An identification of the reasonably foreseeable methods of compliance with the project;
- An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
- An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and
- An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance.

In preparation of the environmental analysis, the LARWQCB may utilize numerical ranges or averages where specific data are not available. The environmental analysis is to take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites, but the LARWQCB is not be required to conduct a site-specific project level analysis of the methods of compliance, which CEQA may otherwise require of those agencies who are responsible for complying with the plan or policy, when they determine the manner in which they will comply.

As to each environmental impact, the SED is to contain findings as described in State CEQA Guidelines (CCR Title 14, Section 15091, and if applicable, a statement of overriding considerations as described in CCR Title 14, Section 15093. If the LARWQCB determines no fair argument exists that a proposed program alternative could result in any foreseeable significant adverse environmental impacts, the SED is to include a finding to that effect in lieu of the analysis of alternatives and mitigation measures.

### II.5.3 California Public Resources Code (PRC)

PRC Section 21159 requires an environmental analysis take into account a reasonable range of environmental, economic, and technical factors; population and geographic areas; and specific sites. PRC Section 21159(d) states that the LARWQCB is not required to conduct a “project level analysis”; however, a project-level analysis must be performed by the local agencies that will implement the strategies and projects identified in the SNMP (PRC Section 21159.2). LARWQCB is prohibited from specifying the manner of compliance with its regulations (California Water Code Section 13360), and accordingly, the actual environmental impacts will necessarily depend upon the compliance strategy selected by the local agencies and other permittees.

### II.5.4 CEQA Scoping Meeting

Both the RWQCB staff and stakeholder groups were involved in the environmental analysis for the SNMP. The table below lists the different aspects of the CEQA process and identifies the roles of each party.

TASK	LARWQCB	STAKEHOLDERS
Lead Agency	Lead	
CEQA Scoping Meeting	Co-Lead	Co-Lead
Environmental Analysis	Oversight	Lead
SED Development	Oversight	Lead
Document Review	Lead	
Response to Comments	Lead – Regulatory	Lead – Technical
Revisions	Oversight/Review	Lead
Public Hearing	Lead	
Project Level EIR		Lead

Source: Regional Water Board Assistance in Guiding Salt and Nutrient Management Plan Development in the Los Angeles Region

The CEQA scoping meeting was held jointly by the LARWQCB staff and stakeholder groups on March 8, 2016, while the environmental analysis was conducted primarily by the stakeholder groups with oversight and review by the LARWQCB. LARWQCB had the lead in responding to the regulatory comments, while stakeholders had the lead for responding to technical comments.

## SECTION III ENVIRONMENTAL SETTING

### III.1 INTRODUCTION

The primary goal of the San Gabriel SNMP is to assist Watermaster and participating/potential stakeholders to comply with the Policy regarding the use of the recycled water from municipal wastewater treatment facilities as a safe source of water supply, while maintaining the WQOs for salt and nutrients in the Basin Plan established by the LARWQCB.

Specific requirements described in the Policy that are addressed in the SNMP include (1) characterization of the Basin, (2) identification of sources of salt, nutrients, and constituents of emerging concern (CECs) (if necessary) and their fate and transport, (3) estimation of salt, nutrients, and CECs (if necessary) loadings and assimilative capacities, (4) identification of water recycling and stormwater recharge/use goals and objectives, (5) verification of compliance with Resolution No. 68-16 through anti-degradation analyses, and (6) development of a monitoring plan to verify compliance with the Basin water quality objectives. Throughout this SED, there are references to Tables, Plates, and Appendices from the San Gabriel SNMP and they are included in this SED by reference.

### III.2 LAND USE AND POPULATION

The San Gabriel Valley encompasses an area of approximately 167 square miles and is bounded on the north by the San Gabriel Mountains, on the northwest by Raymond Basin, on the south by Central Basin, and on the east by Puente Basin and Six Basins. The current population is about 1.2 million people.

In the 20<sup>th</sup> century, the San Gabriel Valley “*has undergone a cultural change, progressing from a predominantly rural and agricultural community to a residential and commercial urban complex. Agricultural lands increased from 6,300 acres [about 6 percent of the Basin] in 1880 to 60,300 acres [about 56 percent] in 1924, then decreased steadily to 15,300 acres [about 14 percent] in 1960; urbanization, on the other hand, increased constantly – from 1,700 acres [about 2 percent] in 1904 to 74,500 [about 70 percent] in 1960*” A recent study conducted by USGS indicates that land use in the Basin is approximately 84 percent urban, 16 percent natural, and 1 percent agricultural .

### III.3 CLIMATE AND PRECIPITATION

The San Gabriel River and Rio Hondo watershed is located within a region of both semiarid and Mediterranean climate, consisting of intermittent rain during the winter months and no rain during the

summer months. The majority of the annual rainfall occurs between December and March. Precipitation in the San Gabriel River and Rio Hondo watershed has been monitored by a network of precipitation stations operated by LACDPW. During the period from water year 1924-25 through 2010-11, the average precipitation ranged from 9.77 to 67.41 averaging 27.28 inches per year (in/yr) for the mountains watershed, and from 5.72 to 45.42 and averaging 18.56 in/yr. for the valley floor.

A cumulative departure from average precipitation curve has been used to evaluate wet-dry cycles for a hydrologic period. This curve is a time-series plot of the summation of the differences between the annual and average precipitation (departures) from the beginning of the hydrologic period. Upward sloping trends on the curve correspond to wet cycles, and downward sloping trends correspond to dry cycles. The cumulative departure curves for the San Gabriel river and Rio Hondo watershed for the period from 1926-27 to 2010-11 indicates the watershed has experienced numerous wet-dry cycles in the past.

### **III.4 MANAGEMENT OF THE GROUNDWATER BASIN**

The Main Basin has been adjudicated and management of the local water resources within the Main Basin is based on that adjudication. Management of the water resources in the Main Basin is based upon Watermaster services under two Court Judgments: San Gabriel River Watermaster (River Watermaster)<sup>1</sup> and Main San Gabriel Basin Watermaster (Basin Watermaster)<sup>2</sup>. The following sections provide a description of the two Judgments and the Five Year Water Quality and Supply Plan that make up the groundwater management plan for the Main Basin.

#### **III.4.1 Main Basin – Long Beach Judgment**

On May 12, 1959, the Board of Water Commissioners of the City of Long Beach, the Central Basin Municipal Water District (Central District), and the City of Compton, as plaintiffs, filed an action against San Gabriel Valley Water Company and 24 other producers of groundwater from the San Gabriel Valley as defendants. This action sought a determination of the rights of the defendants in and to the waters of the San Gabriel River system and to restrain the defendants from an alleged interference with the rights of plaintiffs and persons represented by the Central District in such waters. After six years of study and

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<sup>1</sup> Board of Water Commissioners of the City of Long Beach, et al., v. San Gabriel Valley Water Company, et al., Los Angeles County Case No. 722647, Judgment entered September 24, 1965.

<sup>2</sup> Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973.

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negotiation a Stipulation for Judgment was filed on February 10, 1965, and the Judgment (Long Beach Judgment) was entered on September 24, 1965. Under the terms of the Long Beach Judgment, the water supply of the San Gabriel River system was divided at Whittier Narrows between San Gabriel Valley upstream and the coastal plain of Los Angeles County downstream.

Under the terms of the Long Beach Judgment, the area downstream from Whittier Narrows (Lower Area), the plaintiffs and those they represent, are to receive a quantity of usable water annually from the San Gabriel River system comprised of usable surface flow, subsurface flow at Whittier Narrows and water exported to the Lower Area. This annual entitlement is guaranteed by the area upstream of Whittier Narrows (Upper Area), the defendants, and provision is made for the supply of Make-up Water by the Upper Area for years in which the guaranteed entitlement is not received by the Lower Area.

Make-up Water is imported water purchased by the Main Basin Watermaster and delivered to agencies in Central District to satisfy obligations under the Long Beach Judgment. The entitlement of the Lower Area varies annually, dependent upon the 10-year average annual rainfall in the San Gabriel Valley for the 10 years ending with the year for which entitlement is calculated.

The detailed operations described in the Long Beach Judgment are complex and requires continuous compilation of data so that annual determinations can be made to assure compliance with the Long Beach Judgment. In order to do this, a three-member Watermaster was appointed by the Court, one representing the Upper Area parties nominated by and through Upper District, one representing the Lower Area parties nominated by and through the Central District, and one jointly nominated by Upper District and Central District. This three-member board is known as the River Watermaster.

The River Watermaster meets periodically during the year to adopt a budget, to review activities affecting water supply in the San Gabriel River system area, to compile and review data, to make determinations of usable water received by the Lower Area, and to prepare its annual report to the Court. The River Watermaster has rendered annual reports for the water years 1963-64 through 2014-15 and operations of the river system under that Court Judgment and through the administration by the River Watermaster have been satisfactory since its inception.

One major result of the Long Beach Judgment was to leave the Main Basin free to manage its water resources so long as it meets its downstream obligation to the Lower Area under the terms of the Long Beach Judgment. Upper District intervened in the Long Beach case as a defendant to enforce the provisions of a Reimbursement Contract, which was incorporated into the Long Beach Judgment to assure that any Make-up Water obligations under the terms of the Long Beach Judgment would be satisfied.



### III.4.2 Main Basin – Main Basin Judgment

The Upper Area then turned to the task of developing a water resources management plan to optimize the conservation of the natural water supplies of the area. Studies were made of various methods of management of the Main Basin as an adjudicated area and a report thereon was prepared for the Upper San Gabriel Valley Water Association, an association of water producers in the Main Basin. After due consideration by the Association, Upper District was requested to file as plaintiff, and did file, an action on January 2, 1968, seeking an adjudication of the water rights of the Main Basin and its Relevant Watershed. After several years of study (including verification of annual water production) and negotiations, a stipulation for entry of Judgment was approved by a majority of the parties, by both the number of parties and the quantity of rights to be adjudicated. Trial was held in late 1972 and the Judgment (Main Basin Judgment) was entered on January 4, 1973.

Under the terms of the Main Basin Judgment all rights to the diversion of surface water and production of groundwater within the Main Basin and its Relevant Watershed were adjudicated. The Main Basin Judgment provides for the administration of the provisions of the Main Basin Judgment by a nine-member Main Basin Watermaster. Six of those members are nominated by water producers (producer members) and three members (public members) are nominated by the Upper District and the San Gabriel Valley Municipal Water District (SGVMWD), which overlies most of the Basin. The nine-member board employs a staff, an attorney and a consulting engineer. The Main Basin Watermaster holds public meetings on a regular monthly basis throughout the year.

The Main Basin Judgment does not restrict the quantity of water, which parties may extract from the Main Basin. Rather, it provides a means for replacing all annual extractions in excess of a Party's annual right to extract water with Supplemental Water. The Main Basin Watermaster annually establishes an Operating Safe Yield for the Main Basin which is then used to allocate to each Party its portion of the Operating Safe Yield which can be produced free of a Replacement Water Assessment. If a producer extracts water in excess of its right under the annual Operating Safe Yield, it must pay an assessment for Replacement Water, which is sufficient to purchase one acre-foot of Supplemental Water to be spread in the Main Basin for each acre-foot of excess production. All water production is metered and is reported quarterly to the Main Basin Watermaster.

In addition to Replacement Water Assessments, the Main Basin Watermaster levies an Administration Assessment to fund the administration of the Basin management program under the Court Judgment and a Make-up Obligation Assessment in order to fulfill the requirements for any make-up Obligation under the Long Beach Judgment and to supply fifty percent of the administration costs of the

River Watermaster service. The Main Basin Watermaster levies an In-lieu Assessment and may levy special Administration Assessments.

Water rights under the Main Basin Judgment are transferable by lease or purchase so long as such transfers meet the requirements of the Judgment. There is also provision for Cyclic Storage Agreements by which Parties and non-parties may store imported supplemental water in the Main Basin under such agreements with the Main Basin Watermaster pursuant to uniform rules and conditions and Court approval.

The Main Basin Judgment provides that the Main Basin Watermaster will insofar as practicable, spread imported water in the Main Basin to maintain the groundwater elevation at the Key Well above 200 feet. One of the principal reasons for the limitation on spreading imported water when the Key Well elevation exceeds 250 feet is to reserve ample storage space in the Main Basin to capture native surface water runoff when it occurs and to optimize the conservation of such local water. Under the terms of the Long Beach Judgment, any excess surface flows that pass through the Main Basin at Whittier Narrows to the Lower Area (which is then conserved in the Lower Area through percolation to groundwater storage) is credited to the Upper Area as Usable Surface Flow.

#### **III.4.3 Main Basin – Operations of the Groundwater Basin**

Through the Long Beach Judgment and the Main Basin Judgment, operations of the Main Basin are optimized to conserve local water to meet the needs of the parties of the Main Basin Judgment. Typically, water producers within Upper District rely upon groundwater from Main Basin for their water supply.

Imported water for groundwater replenishment is delivered through the flood control channels and diverted and spread at spreading grounds through Main Basin Watermaster's agreement with the Los Angeles County Department of Public Works (DPW). Groundwater replenishment utilizes imported water and is considered Replacement Water under the terms of the Main Basin Judgment. It can be stored in the Main Basin through Cyclic Storage agreements, authorized by terms of the Main Basin Judgment, but such stored water may be used only to supply Supplemental Water to the Main Basin Watermaster.

The Main Basin Watermaster has entered into a Cyclic Storage Agreement with each of the three municipal water districts. One is with MWD and Upper District, which permits MWD to deliver and store imported water in the Main Basin in an amount not to exceed 100,000 acre-feet for future Replacement Water use. The second Cyclic Storage Agreement is with Three Valleys Municipal Water District (TVMWD) and permits Metropolitan to deliver and store up to 40,000 acre-feet for future Replacement

Water use. The third is with SGVMWD and contains generally the same conditions as the agreement with MWD except that the stored quantity is not to exceed 50,000 acre-feet.

Imported Make-up Water has been delivered to lined stream channels and conveyed to the Lower Area. Make-up Water is required to be delivered to the Lower Area by the Upper Area when the Lower Area entitlement under the Long Beach Judgment exceeds the usable water received by the Lower Area. Imported water is used to fulfill the Make-up Water Obligation when the amount of Make-up Water cannot be fulfilled by reimbursing the Lower Area interests for their purchase of recycled water. The amount of recycled water for which reimbursement may be made as a delivery of Make-up Water is limited by the terms of the Long Beach Judgment to the annual deficiency in Lower Area Entitlement water or to 14,735 acre-feet, whichever is the lesser quantity.

#### **III.4.4 Main Basin – Five-Year Water Quality and Supply Plan**

The Main Basin Watermaster was created in 1973 to resolve water issues that had arisen among water users in the San Gabriel Valley. Main Basin Watermaster's mission was to generally manage the water supply of the Main Basin. During the late 1970s and early 1980s, significant groundwater contamination was discovered in the Main Basin. The contamination was caused in part by past practices of local industries that had carelessly disposed of industrial solvents referred to as Volatile Organic Compounds (VOCs) as well as by agricultural operations that infiltrated nitrates into the groundwater. Cleanup efforts were undertaken at the local, state, and federal level.

Local water agencies adopted a joint resolution in 1989 regarding water quality issues that stated Main Basin Watermaster should coordinate local activities aimed at preserving and restoring the quality of groundwater in the Main Basin. The joint resolution also called for a cleanup plan. In 1991, the Court granted Main Basin Watermaster the authority to control pumping for water quality purposes. Accordingly, Main Basin Watermaster added Section 28 to its Rules and Regulations regarding water quality management. The new responsibilities included development of a Five-Year Water Quality and Supply Plan, updating it annually, submitting it to the LARWQCB, and making it available for public review by November 1 of each year.

Main Basin Watermaster prepares and annually updates the Five-Year Water Quality and Supply Plan in accordance with the requirements of Section 28 of its Rules and Regulations. The objective is to coordinate groundwater-related activities so that both water supply and water quality in the Main Basin are protected and improved. Many important issues are detailed in the Five-Year Plan, including how Main Basin Watermaster plans to:

1. Monitor groundwater supply and quality;
2. Develop projections of future groundwater supply and quality;
3. Review and cooperate on cleanup projects, and provide technical assistance to other agencies;
4. Assure that pumping does not lead to further degradation of water quality in the Basin;
5. Address Perchlorate, N-nitrosodimethylamine (NDMA), and other emerging contaminants in the Basin;
6. Develop a cleanup and water supply program consistent with the U.S. Environmental Protection Agency (USEPA) plans for its San Gabriel Basin Superfund sites; and
7. Coordinate and manage the design, permitting, construction, and performance evaluation of the Baldwin Park Operable Unit (BPOU) cleanup and water supply plan.

The Main Basin Watermaster, in coordination with Upper District, has worked with state and federal regulators, along with local water companies to clean up water supplies. Section 28 of the Main Basin Watermaster's Rules and Regulations require all producers (including the City) to submit an application to 1) construct a new well, 2) modify an existing well, 3) destroy a well, or 4) construct a treatment facility. The Main Basin Watermaster prepares a report on the implications of the proposed activity. As a party to the Main Basin Judgment, the City reviews a copy of these reports and is provided the opportunity to submit comments on the proposed activity before the Main Basin Watermaster Board takes final action.

### **III.5 GROUNDWATER BASIN OVERVIEW**

The San Gabriel SNMP includes only the portion of the San Gabriel Valley Basin included in the Basin Judgment. The Puente Basin and the Six Basins are subject of separate court adjudications and are not included as part of the San Gabriel SNMP; the Spadra sub-basin is currently not adjudicated, and likewise, not included in the SNMP.

#### **III.5.1 Geography**

The Basin underlies the San Gabriel Valley located in southeastern Los Angeles County, and is identified by the CDWR as Groundwater Basin Number 4-13, as shown on Plate III.2. The Basin is bounded by the line of contact between alluvium and the crystalline and metamorphic rocks of the San Gabriel Mountains on the north, by the Raymond fault on the northeast, by the line of contact between the sedimentary rocks of a system of low rolling hills (Repetto, Merced, Puente, and San Jose Hills) on the

west and south, and by the bedrock high between San Dimas and La Verne on the east. The Whittier Narrows, a 1.5-mile gap between the Merced and Puente Hills, forms the only exit for the Basin surface water and groundwater, as shown on Plate III.3. The Basin ground surface slopes downward from approximately 1,200 feet above mean sea level (msl) in the San Dimas area, 850 feet msl in the Pomona area on the east, and 600 feet msl in the Alhambra area on the west to approximately 200 feet msl in the Whittier Narrows area on the southwest. According to the CDWR, the Basin surface area is approximately 167 square miles (mi<sup>2</sup>) or 106,880 acres .

### **III.5.2 Geology**

According to the CDWR, the Basin is a structural basin filled with permeable alluvial deposits (water-bearing formations) and underlain and surrounded by relatively impermeable rocks (nonwater-bearing formations). The Basin also contains many geological features and faults that may influence groundwater movement into, through, or within the Basin. The general geology of the San Gabriel Valley is shown on Plate III.5.

#### *III.5.2.1 Nonwater-Bearing Formations*

The non-water-bearing formations include the igneous and metamorphic rocks (the basement complex rocks and the Glendora Volcanics) and most of the sedimentary Tertiary formations, as shown on Plate III.5. Although these formations are considered non-water-bearing, wells drilled into them may intersect fractures containing water and can produce up to 15 gallons per minute (gpm). These formations are assumed as the boundaries of the San Gabriel Valley groundwater basin.

#### *III.5.2.2 Water-Bearing Formations*

The principal water-bearing formations of the Basin are unconsolidated and semi-consolidated non-marine sediments of Recent and Pleistocene age varying from boulders and coarse gravel, in areas near the mountain front, to medium- and fine-sand containing a larger amount of silt and clay, in areas away from the mountains. Materials comprising the formations were derived chiefly from the San Gabriel Mountains and extend to a maximum depth of more than 4,000 feet. Primarily, these materials consist of the older alluvium, which constitutes the main valley fill material and is exposed around the margins of the entire Basin, the recent alluvium, which blankets the center of the valley floor, and the transition zone deposits, which lie along San Dimas Wash in the eastern part of the Basin, as shown on Plate III.5.

### III.5.2.3 Geological Features and Faults

Numerous geological features and faults have been delineated in the Basin, as shown on Plate III.5; however, only a few of these faults influence groundwater movement in the Basin. According to the CDWR, these faults may be formed by impervious rock brought into contact with water-bearing material, by an offsetting aquifer, by impervious gouge formed in bedrock or alluvium as a result of movement along a fault plane, by fractures in bedrock sealed by impervious deposits, and by permeable or open areas along the line of faulting that act as a conduit carrying water laterally along the fault line. The faults that affect groundwater movement in the Basin are the Raymond fault and the Duarte fault.

The Raymond fault forms the boundary between the Basin and the Raymond Basin from the City of South Pasadena on the west to the City of Monrovia on the east. In addition to the difference in water level elevation, the barrier effect of the Raymond fault also is shown by the presence of artesian conditions during periods of high water level, and by the creation of ponds and swampy areas north of the fault line. Based on semi-annual groundwater contour maps generated by Watermaster, the Raymond fault appears to impede groundwater movement southward from the Raymond Basin into the Basin. The groundwater mound in the vicinity of the City of Monrovia, as shown on Plate III.7, appears to be caused by recharge water from the Sawpit Canyon fault.

### III.5.3 Hydrogeology

The basin is a structural basin filled with permeable alluvial deposits, which is underlain and surrounded by relatively impermeable rock, forming an aquifer. The basin aquifer is stratified in some areas by confining or semi-confining layers consisting of impermeable or less-permeable materials such as clay or silt. In these areas, the basin aquifer is an aquifer system that may include an unconfined or water-table aquifer overlying individual confined or artesian aquifers separated by semi-confining or confining layers. Groundwater in the confined aquifers is normally under pressure; therefore, water will rise in a well drilled to these aquifers to a level above their overlying confining layer, which is called the potentiometric surface. In general, the basin aquifer is considered unconfined because the semi-confining or confining layers are not continuous across the basin, as shown on plates III.6b and III.6c.

### III.5.4 Groundwater Storage Capacity and Groundwater in Storage

The groundwater storage capacity of the San Gabriel Valley (from ground surface to the base of fresh water) was estimated by the CDWR to be 9,500,000 af in 1966, 10,438,000 af in 1975, and 10,740,000 af in 2004.

The amount of groundwater in storage was estimated to be 9,700,000 af in 1960. Watermaster has been using the groundwater in storage estimated by the CDWR in 1960, i.e. 9,700,000 af, and its rule of thumb for changes in groundwater in storage, i.e. 8,000 af for each foot of change in groundwater elevation at the Key Well, to evaluate the Basin groundwater storage. During the period from 1933 to 2012, groundwater in storage in the Basin varied from approximately 7,510,000 af in 2009 to approximately 8,470,000 af in 1944 averaging approximately 7,860,000 af, as shown on Plate III.19. The estimated volume of groundwater in storage for this SNMP is shown in Table III.6. As conservative approach, this SNMP assumes that only 75 percent of the Basin volume, or about 6,000,000 acre-feet is included in mixing calculations. Extraction wells in the Main Basin typically are about 500 feet to 1,000 feet deep and are screened over large (several hundred feet) intervals, facilitating vertical mixing. Likewise, mixing also occurs as the groundwater flows in the general direction from east to west. Consequently, assimilative capacity calculations in Section III.4.3 use a value of 6,000,000 acre-feet for Basin volume and consider the 25 percent reduction from 8,000,000 acre-feet as a margin of safety.

### III.5.5 Water Production

The Basin water production comes from groundwater extracted from the Basin, surface water diversion from the San Gabriel River, groundwater imported from the Raymond Basin, and surface water imported from the State Water Project. A portion of the Basin water production, however, has been exported by producers to serve their service areas in the Central Basin.

#### III.5.5.1 Basin Groundwater Extraction and Surface Water Diversion

Since 1973-74, annual groundwater extraction and surface water diversion have been reported in the Watermaster Annual Reports. Approximately 500 groundwater production wells were drilled in the Basin, but only 229 wells are currently active or standby. The locations of the active or standby wells are shown on Plate III.14. The annual groundwater extraction and surface water diversion from 1973-74 to 2010-11 are included in Appendix F. During this period, groundwater extraction varied from 181,240 to 270,380 af/yr, averaging 228,040 af/yr. Surface water diversion varied from 4,690 to 22,820 af/yr,

averaging 15,870 af/yr, as shown on Plate III.20. Table III.6 shows the total water production from the San Gabriel Basin.

### III.5.5.2 *Imported Water*

Annual imported water for direct municipal water use and groundwater recharge from 1963-64 through 2010-11 was obtained from the Watermaster annual reports [21] and Raymond Basin Management Board (Raymond Board) annual reports, as shown in Appendix G. Water for direct municipal water use is either treated imported water or groundwater imported from water producers in the Raymond Basin. Treated surface water imported from Upper District and Three Valleys Municipal Water District (Three Valleys District) for municipal uses varied from 250 to 50,760 af/yr, averaging 16,030 af/yr. Groundwater imported from the Raymond Basin for municipal uses varied from 520 to 6,200 af/yr, averaging 3,310 af/yr. Surface water from the State Water Project is imported for groundwater recharge by the Upper District, the San Gabriel Valley Municipal Water District (San Gabriel District), and Three Valleys. During this period, surface water imported from State Water Project varied from 0 to 79,040 af/yr, averaging 31,320af/yr. The total imported water varied from 5,240 to 119,630 af/yr, averaging 50,670 af/yr. The annual imported water is included in Appendix G and Table III.6.

### III.5.5.3 *Exported Water*

California Domestic Water Company (CDWC), San Gabriel Valley Water Company (SGVWC), SWS, and the City of Whittier have delivered water from their wells in the Basin to their service areas in the Central Basin. Annual groundwater exported from the Basin, as shown in Appendix H and Table III.6), was reported in the River Watermaster's Annual Reports. During the period from 1955-56 through 2010-11, groundwater exported from the Basin varied from 25,500 to 44,200 af/yr at an average of 35,700 af/yr. Annual groundwater exported from the Basin by these producers is shown on Plate III.21.

## III.6 GROUNDWATER QUALITY

The San Gabriel Valley Groundwater Basin water rights were adjudicated in 1972 and the quantity and the quality of the Basin water supplies have been managed by the Watermaster since 1972.

As required by the Policy, the SNMP includes the identification of salt and nutrient sources, calculations of assimilative capacity, and loading estimates, and a description of the fate and transport of salt and nutrients in the groundwater. The following sections summarizes the indicator constituents for salt and nutrients that were identified in the SNMP, discusses the fate and transport of these constituents in



groundwater, and provide a summary of the existing groundwater quality that was determined from the SNMP analysis.

### III.6.1 Indicator Constituents for Salt and Nutrients

The primary natural source for salts and nutrients in the groundwater is the weathering of Basin rock and minerals. The most common salts in the Basin's soils include chlorides, sulfates, and carbonates of calcium, magnesium, potassium, and sodium.

Anthropogenic sources of salts and nutrients in the Basin groundwater include releases of detergents, water softeners, water treatment chemicals, industrial runoff, grey-water reuse in residential irrigation systems, and wastewater treatment facilities.

As described in the SNMP, constituents of concern in the Basin evaluated were chloride, sulfate, nitrate, and TDS. Below are descriptions of each constituent.

- **Chloride** – Chloride is an inorganic salt that is naturally-occurring in groundwater. The primary natural source for chloride in Basin groundwater is the weathering of rock and minerals, and varies in concentration due to the mineralogy present in the area.
- **Sulfate** – Sulfate is an inorganic salt that is naturally-occurring in groundwater. Like chloride, the primary natural source for sulfate in Basin groundwater is the weathering of rock formations.
- **Nitrate** – Nitrate is an inorganic nutrient that can be found naturally in the environment. High levels of nitrate in groundwater are typically due to anthropogenic sources, such as agriculture, septic systems, landscape fertilization, and wastewater treatment facilities. Atmospheric deposition of nitrogen-based compounds from anthropogenic sources also contributes to nitrate formation in the soil, which can perchlorate down to the groundwater.
- **TDS** – TDS is a measure of the total salts dissolved in water. TDS concentrations can be impacted by the natural rock formation of the aquifer, as well as anthropogenic sources.

### III.6.2 Existing Groundwater Quality for Indicator Constituents

Following its creation in 1973, Watermaster assumed responsibility for the CCR Title 22 mandated water quality sampling of groundwater production wells in the Basin. CCR Title 22 sampling requires all wells used for potable water supplies to be sampled at least once every three years for chloride, sulfate, and TDS, and at least annually for nitrate. In addition, all wells are sampled for General Mineral, General Physical, Inorganics, Radioactivity, VOC, plus various emerging contaminants on a regular and continuous basis. All data is provided to the State Water Resources Control Board, Division of Drinking Water (DDW) electronically and maintained on the Watermaster database. Since the late 1970s and early 1980s, groundwater quality monitoring activities have been expanded to include volatile organic compounds (VOCs), and as a result, groundwater contamination was discovered in the Basin.

Since fiscal year 1994-95, Watermaster has also implemented its Basinwide Groundwater Quality Monitoring Program (BGWQMP) to sample all production wells (both potable and non-potable) in the Basin at least once a year for VOCs, TDS, and nitrates, and once every three years for chloride and sulfate, in addition to the LARWQCB and USEPA monitoring programs. These groundwater quality monitoring programs have resulted in a large volume of water quality records that are currently stored in the databases managed by Watermaster, LARWQCB, USEPA, and DDW.

#### III.6.2.1 Nitrate

From 1973-74 to 2011-12, the annual average nitrate concentration of the Basin, i.e. the average concentration of groundwater extracted from the Basin, ranged from 19.0 mg/L in 2011-12 to 34.7 mg/L in 1975-76, averaging 24.2 mg/L. The average nitrate concentration for the most recent 5-year period is 23.3 mg/L.

Portions of the Basin, particularly those areas easterly of Big Dalton Wash historically have experienced nitrate concentrations above the BPO (and PDW Drinking Water limit) of 45 mg/L. The specific course(s) of the elevated nitrate concentrations have not been thoroughly investigated, but likely influenced by extensive historical agricultural activity and use of septic systems in the area. The area is now highly urbanized and the agricultural activities no longer exist and the residences are all on municipal sewer systems. There are relatively few production wells in the easterly portion of the Basin. Producers manage nitrate concentrations through blend plans approved by DDW. Nitrate has generally been detected below 5 mg/L in stormwater runoff and SWP water.

### III.6.2.2 Chloride

The chloride concentration data was derived from approximately 3,900 observations from production wells across the Basin. The annual average chloride concentration was calculated as the arithmetic average concentration of all available water quality data at the production wells within the Basin. From 1973-74 to 2011-12, the annual average chloride concentration of the Basin, i.e. the average concentration of groundwater extracted from the Basin, ranged from 21 mg/L in 1998-99 to 37 mg/L in 1982-83, averaging 28 mg/L, as shown in Appendix K and Plate III.28. The average chloride concentration for the most recent 5-year period is 31 mg/L.

Elevated chloride concentrations were generally found in shallow wells, while low concentrations were found in wells adjacent to streams or spreading grounds. The chloride concentrations exceeding 100 mg/L were generally found in the western portion of the Basin west of Alhambra Wash, in the eastern portion of the Basin east of Little Dalton Wash, and in the vicinity of the mouth of the Puente Valley. Though some individual wells exceeded the Basin Plan Objective, the average chloride concentration has been below 100 mg/L, as shown in Plate III.28. There have been minor changes in chloride concentrations in each decade since the 1970s, as shown in Table III.7.

### III.6.2.3 Sulfate

The sulfate concentration data was derived from approximately 3,900 observations from production wells across the Basin. The annual average sulfate concentration was calculated as the arithmetic average concentration of all available water quality data at the production wells within the Basin. From 1973-74 to 2011-12, the annual sulfate concentration of the Basin, i.e. the average concentration of groundwater extracted from the Basin, ranged from 38 mg/L in 1998-99 to 70 mg/L in 2009-10, averaging 49 mg/L, as shown in Appendix K and Plate III.29. The average sulfate concentration for the most recent 5-year period is 52 mg/L.

Elevated sulfate concentrations were generally found in shallow wells, while low concentrations were found in wells adjacent to streams or spreading grounds. The sulfate concentrations exceeding 100 mg/L were generally found in the western portion of the Basin west of Alhambra Wash, in the eastern portion of the Basin east of Little Dalton Wash, and in the vicinity of the mouth of the Puente Valley. Though several individual wells exceeded the Basin Plan Objective, the average sulfate concentration has been well below 100 mg/L, as shown in Plate III.29. There have been minor changes in sulfate concentrations in each decade since the 1970s, as shown in Table III.7.

### III.6.2.4 TDS

From 1973-74 to 2011-12, the annual average TDS concentration of the Basin, i.e. the average concentration of groundwater extracted from the Basin, ranged from 198 mg/L in 1998-99 to 385 mg/L in 2009-10, averaging 338 mg/L, as shown in Appendix K and Plate III.30a. The average TDS concentration for the most recent 5-year period is 349 mg/L.

The TDS concentrations exceeding 1,000 mg/l were found in the vicinity of the mouth of the Puente Valley, and the TDS concentrations exceeding 500 mg/l were generally found in the eastern portion of the Basin, east of Big Dalton Wash and also in the vicinity of Whittier Narrows, as shown on Plate III.30b. The 2011-12 TDS concentrations in the eastern portion of the Basin and in the vicinity of Whittier Narrows remain above 500 mg/l, as shown on Plate III.30c. The historical high TDS concentrations by producer are provided in Appendix Q, as a composite representative of all salts.

There is an inverse relation between the volume of groundwater in storage and TDS concentration, as shown in Plate III.30d. The mechanism of this interaction is not clear, but when the volume of groundwater in storage decreases, it appears the salts in the water become more concentrated, resulting in increasing TDS concentrations. This relation does not appear to exist for nitrate, chloride, and sulfate. The volume of groundwater in storage has been decreasing since about 2001, as shown in Plate III.19. This decrease in groundwater volume is reflected in the increase in groundwater TDS concentrations observed in Plate III.30a.

## III.6.3 Fate and Transport

### III.6.3.1 Salt

Once salts are in the soil and vadose zone, there are three possible fates: 1) remain in place, 2) wick upward to the surface with water, or 3) percolate downward with water. For simplicity in the following discussion, all references to soil apply equally to the vadose zone. On a landscape scale, salts remain in the soil, migrate to surface waters, or migrate to aquifers.

Salts will remain at the same relative depth if the balance of water applied plus precipitation approximately equals atmospheric demand through evaporation from soil surfaces and transpiration from plant leaves.

Salts will move downward if the balance of water applied plus precipitation exceeds atmospheric demand through evaporation from soil surfaces and transpiration from plant leaves.

Salts will tend to remain in place when the balance of water applied plus precipitation is less than atmospheric demand through evaporation from soil surfaces and transpiration from plant leaves. However, in the case of water tables within 4 to 6 feet of the soil surface, depending upon composition of the soils, salts may move upward. Finer-grain soils (silts, loams, and clays) promote upward capillary movement of water in greater quantity, and from greater depths, resulting in greater salt accumulation at the surface than occurs on coarse-grain soils (sands and sandy loams).

Salts move with water, in the same direction, and generally at the same rate. The exception occurs when the soil chemistry alters the form and solubility of the salt. This may occur through several possible chemical reactions, including salts precipitating out of the water as a solid.

Most clay minerals in the soil are negatively charged, and may adsorb some cations (positively-charged ions), e.g., calcium, magnesium, potassium, and sodium to the mineral surfaces. Anions (negatively-charged ions) move through the soil more readily, though some will be attracted to the cations on soil surfaces. The result is preferential movement of anions, such as chloride sulfates, and nitrates through the soil.

The soils in the basin are typical of semiarid and arid region soils that typically have high concentrations of calcium, often in the form of calcium carbonate (often seen as caliche) and gypsum (calcium sulfate). These salts dissociate weakly in the soil solution, allowing the components to move with water, and to participate in chemical reactions. The most common salt reaction in the soil is precipitation. Some anions, such as chloride, moving through the soil solution may precipitate with cations, such as calcium, to form a salt, such as calcium chloride. Once precipitated, the salt does not move until it dissolves and the individual components enter the soil solution again.

All soils have a limit to the cations and anions they can adsorb. Precipitation of salts in the solid phase is controlled by the concentration of salts in the water, and the availability of minerals in the soil to react with the salts in the water. Salts always precipitate when the amount of water is insufficient to continue leaching them. When sufficient water is available, some salts will be dissolved in the water and leach as the water percolates.

If conditions in the soil become anaerobic, due to saturation and lack of free oxygen, some soil bacteria have the ability to “breathe” minerals such as nitrogen, iron and manganese. When this occurs, iron and manganese become more soluble, and also may participate in precipitation reactions in the soil.

Precipitation removes ions from the soil solution. However, anaerobic conditions are associated with greater leaching, since these conditions occur with saturation.

Water moves from areas of high potential energy to areas of low potential energy, on a landscape, or in the soil or vadose zone. This is commonly stated as water flows downhill. Though gravity pulls water downward, there are other forces in soil that can pull water upward. A wet soil generally has higher potential energy than a dry soil, and so water typically moves toward drier soil. This is the reason that water moves upward from a water table through the capillary fringe. If the soil surface is within the capillary fringe, water will move to the surface. Salts move with water, so if the water goes to the surface, so do the salts. Once at the surface, the water evaporates, and the salts precipitate on the soil surface. This accumulation of salts is common in arid and semiarid regions with shallow water tables, or in areas where irrigation management does not incorporate necessary leaching fractions to leach the salts out of the root zone. When irrigation results in artificially high water tables, a drainage system must be installed to remove the water from the soil profile and root zone. The salts move with the water through the drainage system, typically into surface water, such as rivers.

The salts will move as far downward in the soil as does the water. In semiarid and arid regions, the long-term historic depth of water penetration from natural precipitation is identified by the presence of a zone of increased chloride concentration, often called chloride bulge. This is the reason chloride is used as a tracer; it is the most soluble, and moves the furthest with water. Other salts of lower solubility, such as gypsum, precipitate above the chloride bulge, while calcium carbonate precipitates above the gypsum.

If sufficient water is added to the surface (precipitation and/or irrigation and/or water spreading) to move water through the soil to the groundwater table and aquifer, the salts reach the groundwater and aquifer, as well. Once in the aquifer, the salts remain there unless removed from the aquifer through groundwater pumping or outflow from one basin to another, if a hydraulic connection between aquifers exists.

### III.6.3.2 *Nutrients*

Nutrients in the soil have been classified historically as mobile or immobile, referring to their solubility and tendency to move within the soil. Mobile nutrients have long been recognized as those with the potential to leach below the root zone. However, even “immobile” nutrients may be leached from the soil if sufficient water moves through the soil. Though initially high in calcium and other cations, soils in humid regions often have little calcium remaining because centuries of leaching have washed it out of the soil. More recently, ideas about other immobile nutrients, such as phosphorus, are being revisited as more

is learned about the fixation (holding) capacity of soils for a given nutrient. Once the fixation capacity is reached, the nutrient becomes mobile and may leach into groundwater.

Nitrogen is involved in a complex, natural biochemical nutrient cycle, passing through inorganic solid and gas phases, and solid organic compounds through living organisms and decomposition products of dead organisms and waste products. There are no naturally-occurring soil minerals that contain nitrogen. Nitrogen in the soil is most commonly found in organic compounds, and as ammonium, and nitrate. Nitrite is seldom present in large concentrations in soil, except in anaerobic conditions. Naturally-occurring soil organisms readily convert ammonium to nitrite, and nitrite to nitrate, a process called nitrification. Other organisms decompose proteins in organic materials to release ammonium, which then undergoes nitrification. The abundance of these organisms decreases with soil depth, and so does the conversion of nitrogen from one form to another.

Once in the soil, nitrate may be taken up by plants, used by soil organisms, leached, or reduced. The same processes occur when nitrate is added directly to a soil as fertilizer or as a constituent of recycled water. Nitrate reduction occurs under anaerobic conditions when biological oxygen demand is great. Once all the oxygen is consumed by aerobic organisms during the decomposition of organic compounds, decomposition continues by organisms that “breathe” nitrate instead of oxygen. In these circumstances, nitrate is converted to nitrite. However, nitrite may be further converted to gaseous nitric or nitrous oxides, or dinitrogen gas. Depending upon the depth at which this conversion occurs, these gases may be released into the atmosphere, or may remain dissolved in water. Once in these gas forms, they are unusable to plants or animals, and to most soil organisms.

Nitrate and nitrate have the same solubility characteristics as chloride, and so all previous discussion about chloride transport applies equally to nitrate and nitrite.

Sulfur undergoes similar biological reactions in the soil as nitrogen, but also exists in chemical equilibria with sulfur-containing soil minerals. Sulfates are soluble, but not quite as mobile as nitrate or chloride. Sulfates may be taken up by plants, used by soil microorganisms, leached, or reduced under anaerobic conditions with high biological oxygen demand. Reduced sulfur compounds are odorous gasses that are released into the atmosphere or remain dissolved in water.

#### **III.6.4 Basin Plan Water Quality Objectives**

The Basin is one of 24 groundwater basins located within the Los Angeles Region under jurisdiction of the LARWQCB, extending from Rincon Point (on the coast of western Ventura County) to

the eastern Los Angeles County line, as shown on Plate III.1. The LARWQCB adopts and implements the Basin Plan that serves as a basis for its regulatory program. The current Basin Plan, as amended through 1994, combines and replaces the earlier plans: the Water Quality Control Plan: Santa Clara River Basin and the Water Quality Control Plan: Los Angeles River Basin.

The Basin Plan establishes water quality standards for the surface and ground waters of the Los Angeles Region based upon designated beneficial uses of water and numerical water quality objectives that must be maintained or attained to protect those uses. Beneficial uses for regional groundwater basins generally include:

- Municipal and Domestic Supply (MUN) for community, military, or individual water supply systems including, but not limited to, drinking water supply;
- Industrial Service Supply (IND) for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, geothermal energy production, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization;
- Industrial Process Supply (PROC) for industrial activities that depend primarily on water quality;
- Agricultural Supply (AGR) for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, and support of vegetation for grazing livestock; and
- Aquaculture Supply (AQUA) for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, and harvesting of aquatic plants and animals for human consumption or bait purposes.

The Basin designated beneficial uses, as listed in Table 2-2 of the Basin Plan [2], include MUN, IND, PROC, and AGR. The Basin groundwater is subjected to the following objectives:

- ***Bacteria, Coliform***

In ground waters designated as MUN, the concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.

- ***Chemical Constituents and Radioactivity***

Ground waters designated as MUN shall not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in the following provisions of Title 22 of the California Code



of Regulations which are incorporated by reference into this plan: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals), and Table 4 of Section 64443 (Radioactivity).

Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial uses.

- ***Mineral Quality***

Numerical mineral quality objectives for individual groundwater basins are contained in Table 3-10.

- ***Nitrogen (Nitrate, Nitrite)***

Ground waters shall not exceed 10 mg/L nitrate-nitrogen (nitrogen in the form of nitrate, NO<sub>3</sub>-N) or nitrate-nitrogen plus nitrite-nitrogen (NO<sub>3</sub>-N + NO<sub>2</sub>-N), 45 mg/L as nitrate (NO<sub>3</sub>), or 1 mg/l as nitrite-nitrogen (NO<sub>2</sub>-N).

- ***Taste and Odor***

Ground waters shall not contain taste and odor or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses.

The numerical water quality objectives for the Basin groundwater, which are based on the June 21, 2012 update of Title 22 of the California Code of Regulations (CCRs), are summarized in Table III.1. Neither the Basin Plan nor Title 22 of the CCRs has established the numerical water quality objectives for taste and odor.

The LARWQCB also implements State and federal anti-degradation policies to maintain high quality of both surface and ground waters in California (Resolution No. 68-16 and 40 CFR 131.12). Under the State Non-degradation Objective, whenever the existing quality of water is better than that needed to protect all existing and probable future beneficial uses, the existing high quality shall be maintained until or unless it has been demonstrated to the State that any change in water quality will be consistent with the maximum benefit of the people of the State, and will not unreasonably affect present and probable future beneficial uses of such water. Therefore, unless conditions are met, background water quality concentrations (the concentrations of substances in natural waters which are unaffected by waste management practices or contamination incidents) are appropriate water quality goals to be maintained. If it is determined that some

degradation is in the best interest of the people of California, some increase in pollutant level may be appropriate. However, in no case may such increases cause adverse impacts to existing or probable future beneficial uses of waters of the State.

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## SECTION IV IMPLEMENTATION MEASURES

This section summarizes the implementation measures and recycled water projects developed by the Basin stakeholders, and discussed in the San Gabriel SNMP, to manage salt and nutrient loading. The implementation measures serve as the basis for the program alternatives, which are described in Section V.

### IV.1 IMPLEMENTATION MEASURES

The Basin has been actively managed for many decades to control salt and nutrient loading to preserve the high quality groundwater supplies. Existing programs include support of stormwater runoff replenishment conducted by LACDPW, use of untreated imported water from the State Water project (which is the highest quality imported water currently available) to annually replenish the water Basins as a result of prior years' over production, and an extensive water quality monitoring program. Basin management is conducted in coordination between the Watermaster, Upper District, San Gabriel District, Three Valleys District, MWD, LACSD, and LACDPW. Historically, stakeholders have coordinated to replenish the groundwater supplies with the greatest amount of high quality water as possible. As a result, significant replenishment of the groundwater Basin with high quality (low TDS) water may actually result in calculated net loading of the Basin. However, the additional groundwater volume from such replenishment dilutes the groundwater TDS concentration in the long-term.

The San Gabriel Valley has experienced unprecedented drought conditions since calendar year 2006. As a result, the groundwater elevation at Baldwin Park Key Well has decreased from about 250 feet msl during the Spring of 2005 to about 189 feet msl as of December 2009, as shown on Plate III.24. Since 1972, when the Basin was adjudicated, to present, the Basin Watermaster has actively managed water quality through existing implementation measures (described in greater detail below). Nonetheless, water quality generally improves (i.e. water quality concentrations decrease) coincident with significant rainfall events/recharge of stormwater runoff and the water quality tends to degrade during drought periods, representing a general inverse relationship. Despite the long-term implementation measures the Basin Watermaster has in place, recent drought conditions have had a greater influence on water quality trends over the past 10 years and may give the appearance of an increasing trend in salt and nutrient conditions.

Section 6.b(3)(e) of the Recycled Water Policy states in part that a SNMP shall include "...implementation measures to manage salt and nutrient loading on a sustainable basis..." in the Basin. Implementation measure may have two type of impacts to a groundwater basin. Those impacts consist of 1) loading as the result of additional water replenished in the groundwater basin and 2) change to the concentration of salts

and nutrients that are included in the water that is replenished. The following sections address existing and potential implementation measures that may impact salt and nutrient loading. Those implementation measures are summarized on Table III.15 and briefly described below.

#### **IV.1.1 Existing Implementation Measures**

##### *IV.1.1.1 Groundwater Replenishment*

Maintain Spreading Facilities - LACDPW maintains a complex system of dams, retention basins, storm channels and off-stream spreading grounds to control stormwater runoff and to maximize replenishment of the stormwater flow. The existing spreading grounds are conjunctively operated to enable both stormwater run-off and untreated imported water to be replenished into the Basin in an efficient and effective manner. Local stormwater and untreated imported water from the SWP replenished in these facilities typically have the lowest concentrations of TDS, Nitrate, Sulfate, and Chloride of the various sources contributing to loading. As shown on Appendices M, N, O, and P, the concentration of the TDS, chloride, nitrate, and sulfate in local stormwater and SWP water (which historically have been used to replenish the water supplies of the Basin) is lower than the quality of the groundwater extracted. Consequently, the quality of the Basin will be maintained over time assuming replenishment is greater than or equal to extractions. During drought conditions with little stormwater runoff, this may not be the case.

Maintain Unlined Portions of Rivers and Streams - The San Gabriel River is unlined from Morris Dam to Whittier Narrows Dam, along with portions of the Rio Hondo, Walnut Creek, and San Jose Creek. Stormwater is released under a controlled manner into these unlined water bodies to augment groundwater replenishment that occurs in off-stream spreading grounds. Replenishment of high quality stormwater contributes to the long-term enhancement of groundwater quality.

Groundwater Replenishment Coordinating Group - Representatives from the Watermaster, LACDPW, LACSD, and MWD meet approximately every two months to coordinate the planned replenishment of local and untreated imported water with the availability of the sources of supply and the availability of groundwater replenishment facilities. As the highest quality source of water stormwater run-off is typically given the highest priority for replenishment activities.

Optimize Delivery of SWP Water – SWP water typically contains the lowest concentration of TDS. Consequently, the Watermaster and MWD have endeavored to maximize delivery of untreated SWP water to replenish the Basin in conjunction with groundwater basin management practices.

#### IV.1.1.2 *Recycled Water*

Nitrogen Treatment - Although recycled water is not a significant component of loading in the Basin, historical loading occurred from the discharge of recycled water into the San Jose Creek, San Gabriel River, and Rio Hondo, and the subsequent infiltration of a portion of that discharge. The LACSD has taken steps to reduce the nitrate (nitrogen) concentration in the recycled water.

#### IV.1.1.3 *Imported Water*

Salinity Control - Historically the Basin has used SWP water almost exclusively to replenish the groundwater supplies as the result of groundwater production in excess of water rights. This practice ensures reliable groundwater supplies and that the groundwater levels are operated within a historical range of about 100 feet. MWD has taken proactive steps in conjunction with the California Department of Water Resources (DWR) to ensure the TDS concentrations of the SWP water are maintained. As noted in Section III.6.1, long-term replenishment of the Basin with high quality water will tend to improve Basin water quality over time.

#### IV.1.1.4 *Institutional*

Main San Gabriel Basin Judgment – The Basin Watermaster was created by the court in 1973 to manage both the water quantity and quality of the Basin. These activities include the annual establishment of the Operating Safe Yield which limits the amount of groundwater that can be pumped from the groundwater basin without having to purchase untreated imported water from the SWP. Watermaster coordinates with the LACFCD and MWD to ensure available water supplies are replenished in an efficient manner. Watermaster maintains records of all groundwater produced for the Basin, maintains a database of groundwater quality from all municipal water supply wells, and keeps track of all water entering and leaving the Basin.

#### IV.1.1.5 *Regulatory*

Title 22 Water Quality Monitoring - All municipal water suppliers are required to adhere to the provisions of Title 22 regarding water quality monitoring of municipal water supply wells. In general TDS, chloride, and sulfate samples are collected once every three years and nitrate samples are collected annually. Based on water quality results, municipal water suppliers may need to construct groundwater treatment facilities and/or develop water quality blending plans to maintain production from wells. In those situations, DDW may require more frequent water quality monitoring than those noted above. The municipal water supply wells are distributed throughout

the Basin as shown on Plate III.26 and water quality data from Title 22 water quality sampling will be incorporated into the Basin-wide Salt and Nutrient Monitoring Program described in Chapter V.

#### **IV.1.2 Potential Implementation Measures**

##### *IV.1.2.1 Groundwater Replenishment*

Develop New Spreading Facilities – The Watermaster and LACDPW continually investigate opportunities to expand the network of spreading grounds. Potential new sites include sand and gravel pits.

##### *IV.1.2.2 Stormwater Runoff*

Develop New Spreading Facilities - Cities within the Basin are co-permittees for the new MS4 permit. As such, cities are directed to take proactive steps, both individually and collectively, to implement stormwater Best Management Practices (BMPs) to reduce or eliminate stormwater runoff from facilities and consequently reduce flow in storm channels. These practices may result in increased stormwater replenishment. As noted in Section III.6.1, stormwater runoff typically contains the highest (best) quality of water used to replenish the Basin. Increased replenishment of high quality will tend to improve Basin water quality over time.

##### *IV.1.2.3 Regulatory*

SNMP Monitoring Program - Watermaster will implement a proposed monitoring plan as required by the Recycled Water Policy (See Section V.2). As required by the Recycled Water Policy Section 6.b(3)(a)(iii) water quality data will be reported to the LAWRWQCB at least every three years. The sampling frequency for salts and nutrients will be periodically evaluated and adjusted accordingly as necessary.

## SECTION V PROGRAM ALTERNATIVES

In accordance with CEQA requirements, three program alternatives were developed that encompass reasonable and foreseeable actions within the jurisdiction of the implementing stakeholders. These project alternatives are as follows:

1. No Program (Current Implementation Measures)
2. Planned Recycled Water Project
3. Planned Recycled Water Project and Potential Implementation Measures

These project alternatives are described in greater detail in the subsections below.

### V.1 PROGRAM LEVEL ALTERNATIVES

#### V.1.1 Alternative 1: No Program

Alternative 1 is the no program alternative which assumes the RWQCB will not adopt the SNMP for the San Gabriel Valley Groundwater Basin. Alternative 1 considers current management conditions in the San Gabriel Valley which include the following:

- Maintain spreading facilities
- Maintain unlined portions of rivers and streams
- Meet with Groundwater Replenishment Coordinating Group
- Optimize delivery of imported water
- Maintain treatment standards in recycled water
- Maintain and coordinating salinity control
- Implement Main San Gabriel Basin Judgment provisions
- Conduct Title 22 water quality monitoring

This Program Alternative does not include adoption of a SNMP and consequently would be inconsistent with of the mandates of the State Recycled Water Policy which requires that a SNMP be adopted; therefore, the implementation of Alternative 1 is infeasible and not recommended. Alternative 1 was included in this analysis as a means to compare the impacts of implementing the Recommended Program Alternative with the current status quo.

### V.1.2 Alternative 2: Planned Recycled Water Projects

Alternative 2 is the program alternative which assumes the RWQCB will adopt the SNMP for the San Gabriel Valley Groundwater Basin and the planned recycled water project will be implemented.

The Upper San Gabriel Valley Municipal Water District (Upper District) is developing its Indirect Reuse Replenishment Project (IRRP) which is the only planned recycled water recharge project for within the San Gabriel Basin. The IRRP would provide up to 10,000 ac-ft/yr of recycled water from the San Jose Creek Water Reclamation Plant for groundwater replenishment in the Main Basin, replacing approximately 10,000 ac-ft/yr of untreated imported water previously used for groundwater replenishment.

The IRRP is the only recycled water recharge project and the largest overall recycled water project currently planned for the Main Basin; therefore, it was evaluated specifically in the anti-degradation analysis in the SNMP. The recycled water supply for the IRRP has a typical water quality a potential future recycled water project would likely utilize. Therefore, the IRRP can serve as a surrogate for other potential recycled water projects in terms of evaluating potential environmental impacts.

### V.1.3 Alternative 3: Planned Recycled Water Projects and Potential Implementation Measures

Alternative 3 is the program alternative which assumes the RWQCB will adopt the SNMP for the San Gabriel Valley Groundwater Basin and the planned recycled water project and potential implementation measures will be implemented. The potential implementation measures include developing new spreading facilities for imported water, recycled water, and stormwater conservation.

As discussed previously, the IRRP can serve as a surrogate for other potential recycled water projects in terms of evaluating potential environmental impacts. The recycled water quality of the IRRP is a conservative quality representation of imported water and stormwater quality.

## V.2 RECOMMENDED PROGRAM ALTERNATIVE

Alternative 3 (planned recycled water projects and potential implementation measures) was selected as the program alternative that is most likely to be implemented, thus becoming the Recommended Program Alternative. Alternative 1 is infeasible because it does not implement the SNMP and current projects. By selecting Alternative 3 as the Recommended Program Alternative, all of the potential impacts associated with Alternative 2 are included, while conservatively considering impacts of future implementation measures. Alternative 3 best achieves the objectives of the Recycled Water Policy and SNMP of



encouraging and promoting increased recycled water use by implementing environmentally reasonable implementation measures. Potential environmental impacts associated with implementation of Alternative 3 are discussed in Section VI.

### **V.3 PROJECT LEVEL ALTERNATIVES**

The program alternatives discussed in Section V.1, present several alternatives for likely implementation of the SNMP, and do not require implementation of specific projects to allow the SNMP to be integrated into the Basin Plan. Although the IRRP is named specifically as a planned recycled water project, the IRRP serves as a surrogate for other potential recycled water projects. The proposed SNMP includes guidance on implementing salt and nutrient management measures, including the process for implementing planned and other future management measures in the context of the assimilative capacity and trend analysis.

The results of the anti-degradation analysis indicate there is available assimilative capacity for the constituents nitrate, salt, chloride, and TDS in the San Gabriel Valley Groundwater Basin. The initial assimilative capacity analysis and trend analysis indicate maintaining existing management measures will not cause the water quality objectives to be exceeded in the future and will likely support sustainable management of should the loading sources remain the same. However, future implementation of recycled water projects could alter analysis and the SNMP would provide a mechanism to evaluate impact and implement management measures, if needed. The hypothetical scenarios analyzed as part of the anti-degradation analysis provide hypothetical brackets of water quality in order to provide a framework for comparison with individual projects. The implementation of the IRRP will result in less than 10 percent utilization of the available assimilative capacity. As individual management measures, including recycled water projects, are implemented in compliance with the SNMP, the project proponent would be required to complete a specific project-level CEQA analysis. The specific locations of the components assessed at a project level will be determined by implementing municipalities and agencies.

## SECTION VI ENVIRONMENTAL ANALYSIS

### VI.1 APPROACH TO ENVIRONMENTAL IMPACT ANALYSIS

A program-level environmental analysis of the Recommended Program Alternative described in Section V.2 was conducted and results are presented in this SED. Given that the CEQA analysis required for the SED is a program-level analysis, the environmental impacts and mitigation measures identified are broad and are not intended to represent a comprehensive or exhaustive list of impacts for potential projects implemented in the San Gabriel Valley. Parties responsible for implementing specific projects within the San Gabriel Valley will be required, as necessary, to conduct project-level environmental analyses, including CEQA analyses in order to identify specific impacts and mitigation measures.

The program-level environmental analysis presented in this SED assumes Upper District will implement the IRRP; and stakeholders will design, construct, and maintain the potential implementation measures involving developing new spreading facilities for groundwater replenishment of stormwater, recycled water, and/or imported water, collectively referred to herein as “program facilities”. It is also assumed the projects associated with the implementation of the program alternatives would be in compliance of all applicable laws, regulations, ordinances, and formally adopted municipal and/or agency codes, standards, and practices. The new facilities associated with the implementation measures include new pipelines and the development of new spreading facilities.

Potential reasonably foreseeable environmental impacts associated with the program facilities were evaluated with respect to the environmental resources categories listed in the CEQA checklist in Section VI.2. For each environmental resource, the potential environmental impacts were evaluated for significance with the following categories:

- Potentially Significant Impact – Substantial adverse impacts on the environment are identified that cannot be feasibly mitigated or avoided.
- Less Than Significant Impact with Mitigation Incorporated – Substantial adverse impact(s) on the environment are identified, but could be avoided or feasibly mitigated to a less than a significant level.
- Less Than Significant Impact – No substantial adverse effects on the environment are identified.
- No Impact – No adverse effects on the environment are expected.

Pursuant to Water Code Section 13360, the RWQCB cannot specify specific compliance and mitigation measures that responsible agencies and project proponents may choose to adopt to implement

the SNMP. Project proponents are required to determine specific mitigation measures for actual environmental impacts that are determined based on the compliance strategy that is implemented; these mitigation measures and potential impacts may vary from the reasonable foreseeable impacts and mitigation strategies presented in Section VI.2 and VI.3.

**VI.2 CEQA ENVIRONMENTAL CHECKLIST – RECOMMENDED PROGRAM ALTERNATIVE**

The following Environmental Checklist has been completed as per the requirements of California Code of Regulations Section 3777(a).

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I) AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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II) AGRICULTURAL AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) 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:

a) Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?





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 Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?





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

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations - Would the project:

- |   |                          |                                     |                                     |                                     |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| c) 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 which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Create objectionable odors affecting a substantial number of people?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

IV. BIOLOGICAL RESOURCES – Would the project:

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have substantial adverse effects, 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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse				

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on 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 and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Uniform Building Code (1994), creating substantial risks to life or property?

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
 

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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VII. GREENHOUSE GAS EMISSIONS - Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
 

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?
 

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

- a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?
 

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------
- 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?
 

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two mile of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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where residences are intermixed with wildlands?

IX. HYDROLOGY AND WATER QUALITY - Would the project:

- |   |                          |                                     |                                     |                                     |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 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)? | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Create or contribute runoff water, which would exceed the capacity   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

XI. MINERAL RESOURCES – Would the project?

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

XII. NOISE – Would the project result in:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 or working in the area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING – Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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construction of replacement housing elsewhere?

XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, need for 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:

DRAFT

i) Fire Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Parks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
vi) Other public facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XV. RECREATION –

a) Would the project 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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. TRANSPORTATION/TRAFFIC – Would the project?

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
resources, or are new or expanded entitlements needed?				
e) Result in a determination by the wastewater treatment provider which 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulation related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE –

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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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 futures projects)?

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?





## VI.3 RESULTS OF ENVIRONMENT EVALUATION – RECOMMENDED PROGRAM ALTERNATIVE

### VI.3.1 Aesthetics

Normal operations of program facilities are not likely to impact scenic vistas and local scenic resources because impacts to those facilities would be avoided. Landscaping and/or screening would be used to decrease visual impacts resulting from permanent program facilities. Construction activities have the potential to alter the visual environment within the vicinity of a project; however, construction would be encouraged in disturbed environments to decrease potential impacts of scenic resources and degradation to the existing visual character.

Construction of program facilities is anticipated to occur during daylight hours; therefore, additional artificial lighting would not be required during construction. In the unlikely event that emergency conditions require extended construction hours, artificial lighting could be temporarily required, resulting in potential short-term impacts that are anticipated to be considered less than significant. Any new permanent sources of lighting required for program operations would be shielded to reduce effects to

neighboring development. Accordingly, adverse effects to day or nighttime views in the area are not anticipated and impacts associated with lighting and glare would be less than significant.

The following provides the significance determination of specific CEQA questions relating to aesthetics.

*1a) Would the program have a substantial adverse effect on a scenic vista?*

Significance Determination: Less Than Significant Impact

*1b) Would the program substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Significance Determination: Less Than Significant Impact

*1c) Would the program substantially degrade the existing visual character or quality of the site and its surroundings?*

Significance Determination: Less Than Significant Impact

*1d) Would the program create a new sources of substantial light of glare which would adversely affect day or nighttime view in the area?*

Significance Determination: Less Than Significant Impact

### **VI.3.2 Agriculture Resources**

As discussed in Section III.2, the San Gabriel Valley is primarily urbanized and developed; however, approximately one percent of the San Gabriel Valley is agricultural land. Accordingly, it is unlikely program facilities would conflict with existing agricultural use and farmland would not be converted to non-agricultural use. Likewise, no conversion of forest land would occur.

The following provides the significance determination of specific CEQA questions relating to agriculture resources.

*2a) Would the program convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

Significance Determination: No Impact

2b) *Would the program conflict with existing zoning for agricultural use, or a Williamson Act contract?*

Significance Determination: No Impact

2c) *Would the program conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

Significance Determination: No Impact

2d) *Would the program result in the loss of forest land or conversion of forest land to non-forest use?*

Significance Determination: No Impact

2e) *Would the program involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to nonforest use?*

Significance Determination: No Impact

### **VI.3.3 Air Quality**

The San Gabriel Valley is located in Los Angeles County which lies within the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The USEPA and the California Air Resources Board (CARB) have classified air basins (or portions thereof) as being in “attainment,” “nonattainment,” or “unclassified” for each criteria air pollutant, based on whether or not air quality standards have been achieved. The Los Angeles County portion of the SCAB does not meet federal and/or state standards for Ozone, Lead, particulate matter less than 10 micrometers in diameter (PM10), and fine particulate matter less than 2.5 micrometers in diameter (PM2.5) and is therefore designated a nonattainment area for these pollutants. The Southern California Association of Governments (SCAG) is responsible for preparing the regional transportation strategy and control measures and an Air Quality Management Plan (AQMP), which addresses federal and state Clean Air Act requirements. SCAQMD is responsible for administering the AQMP, which includes programs for improving air quality and thresholds for daily operational emissions.

Project proponents are responsible for complying with all applicable air pollution requirements and laws and must conduct an air quality environmental review to demonstrate that the project’s daily

construction and operational emissions thresholds as established by SCAQMD would not be exceeded, nor would the number or severity of existing air quality violations be increased. The construction of new spreading facilities and recycled water replenishment projects would generate pollutant emissions during construction with the following types of activities: grading, excavation, delivery, and hauling. The operations of the program facilities are anticipated to have less than a significant impact on air quality.

The following provides the significance determination of specific CEQA questions relating to air quality.

*3a) Would the program conflict with or obstruct implementation of the applicable air quality plan?*

Significance Determination: No Impact

*3b) Would the program violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*3c) Would the program 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 which exceed quantitative thresholds for ozone precursors)?*

Significance Determination: Less Than Significant Impact

*3d) Would the program expose sensitive receptors to substantial pollutant concentrations?*

Significance Determination: Less Than Significant Impact

*3e) Would the program create objectionable odors affecting a substantial number of people?*

Significance Determination: Less Than Significant Impact

#### **VI.3.4 Biological Resources**

Critical habitats exist within the San Gabriel Valley including Significant Ecological Areas established by the county of Los Angeles. As described by the federal Endangered Species Act, critical habitat is the geographic area occupied by a threatened or endangered species essential to species conservation, and may also include areas not occupied by the species but rather are essential for species conservation. Project proponents would not to design and construct program facilities such that they do not

conflict with adopted conservation plans. Some temporary disturbances, including the installation of an underground pipeline, may be compatible with conservation plans and be considered a reasonable use of the lands.

Streams and creeks located in the San Gabriel Valley, particularly those that are unlined, have the potential to support riparian and aquatic habitats, including federally protected wetlands. Although the San Gabriel Valley is largely developed, portions of streams and creeks can be utilized as a local movement corridor for wildlife and can be used as temporary or transient habitat by common resident and migratory wildlife.

It could be necessary for project proponents to conduct biological surveys, including database searches in the California Natural Diversity Database, to determine specific species and habitats that may be impacted by program facilities. The results of these studies and database searches would determine if additional mitigation measures may be necessary to reduce impacts to less than significant levels.

Project proponents would design and construct program facilities such that significant impacts to biological resources would not occur, and would not be in conflict with local polices and ordinances. By implementing construction Best Management Practices plus any project specific mitigation measures, potentially significant impacts to biologically resources would be mitigated to less than significant levels. These Best Management Practices could include, but are not limited to the following:

- Flagging and fencing the limits of construction adjacent to sensitive habitats
- Maintaining the project vicinity free of trash and debris which will not only keep the habitat clean but reduce the potential of attracting predator/scavenger species
- Locating staging and refueling areas sufficiently away from jurisdictional waters
- Employing appropriate standard spill prevention practices and clean-up materials
- Installing and maintaining sediment and erosion control measures in accordance with an approved Storm Water Pollution Prevention Plan (SWPPP)
- Maintaining effective control of fugitive dust

The following provides the significance determination of specific CEQA questions relating to biological resources.

*4a) Would the program 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 Game or U.S. Fish and Wildlife Service?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*4b) Would the program 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 California Department of Fish and Game or US Fish and Wildlife Service?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*4c) Would the program have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*4d) Would the program interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*4e) Would the program conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Significance Determination: No Impact

*4f) Would the program conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Significance Determination: No Impact

### **VI.3.5 Cultural Resources**

Los Angeles County is within the traditional territory of the Tongva people (also known as Gabrielino or Gabrieleno, after Mission San Gabriel) until the Spanish invasion in the sixteenth century, when they were displaced and missionized. The earliest evidence of Tongva occupation, derived from linguistic, archaeological, and osteological evidence, suggests the area was inhabited as early as the ninth century Before Common Era (B.C.E.) The Tongva people inhabited not only Los Angeles County but also the majority of modern day Orange County and the islands of Santa Catalina, Santa Barbara, San Nicholas, and San Clemente. At the time of Spanish explorer Juan Rodriguez Cabrillo's entrance into Tongva



territory, it is estimated that their population reached nearly 5,000 people. They were semi-nomadic and subsisted on a hunter-gatherer lifestyle in the rich landscape abundant in coastal resources, as well as acorns, pine nuts, and small game.

Construction activities could result in impacts to cultural resources, including those from the Tongva people. Project proponents will be required to prepare a cultural resources study prior to project implementation to determine any potentially significant impacts to historical sites, or sites of paleontological significance. A cultural resources study may include, as specifically necessary, obtaining a record search from the South Central Coastal Information Center (SCCIC), contacting the Native American Heritage Commission (NAHC) for a Sacred Lands File search and a list of Native American contacts, outreach to the Native American contacts listed by the NAHC, reviewing previous reports for the project vicinity, and undertaking a field survey. Project proponents would implement appropriate mitigation measures, as determined by the cultural resources study.

The following provides the significance determination of specific CEQA questions relating to cultural resources.

*5a) Would the program cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?*

Significance Determination: Less Than Significant Impact

*5b) Would the program cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?*

Significance Determination: Less Than Significant Impact

*5c) Would the program directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Significance Determination: Less Than Significant Impact

*5d) Would the program disturb any human remains, including those interred outside of formal cemeteries?*

Significance Determination: Less Than Significant Impact

### VI.3.6 Geology and Soils

The groundwater basin consists mostly of the recent alluvium deposits of coarse sediments. The aquifer largely consists of sand and gravel deposits with some coarser rocks, cobblestones, and boulders with some clay deposits. Prior to construction of new program facilities, it may be necessary for project proponents to complete a geotechnical investigation and evaluation to identify potential seismic-induced hazards and geologic hazards. Specific mitigation measures would be developed from the results of the geotechnical investigation. Program facilities would be designed in accordance with the potential seismicity of the region in order to avoid potential effects resulting from ground shaking due to earthquakes; therefore, potential impacts associated with strong seismic ground shaking would be mitigated to less than significant levels. Likewise, geologic hazards including potential for landslides and liquefaction would be considered in the design of program facilities to reduce potential impacts to less than significant levels.

Construction of the program facilities, including pipelines, would result in earthwork excavation, removal of unsuitable soil materials, and placement of compacted fill (either local or imported). These activities would result in temporary impacts to the local topography and soils. All construction activities, including grading work, would be performed in accordance with approved construction standards and practices. Impacts would be minimized by proper siting, design, and construction practices.

As required under the National Pollutant Discharge Elimination System (NPDES), administered by the RWQCB, a SWPPP would be created for proposed projects. The plan would address erosion control measures that would be implemented to avoid erosion impacts to exposed soil associated with construction activities. The SWPPP would include a program of Best Management Practices to provide erosion and sediment control and reduce potential impacts to water quality that may result from construction activities, including but not limited to, the following:

- Protection of storm drain inlets located within the Project alignment and in downstream off-site areas with the use of BMPs acceptable to the Upper District, local jurisdictions, and the RWQCB.
- Sweeping of dirt and debris from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events.
- Proper storage, use, and disposal of construction materials.
- Removal of sediment from surface runoff before it leaves the Project site through use of silt fences or other similar devices around the laydown area perimeters.
- Protection of tracking soil off site through use of a gravel strip or wash facilities at exits from Project laydown areas.
- Protection or stabilization of stockpiled soils.

The following provides the significance determination of specific CEQA questions relating to geology and soils.

*6a) Would the program 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 on 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 and Geology Special Publication 42.*

*ii) Strong seismic ground shaking?*

*iii) Seismic-related ground failure, including liquefaction?*

*iv) Landslides?*

Significance Determination: Less Than Significant Impact

*6b) Would the program result in substantial soil erosion or the loss of topsoil?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*6c) Would the program 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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?*

Significance Determination: Less Than Significant Impact

*6d) Would the program be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Significance Determination: Less Than Significant Impact

*6e) Would the program have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

Significance Determination: No Impact

### VI.3.7 Greenhouse Gas Emissions

The California Air Resources Board (CARB) maintains a statewide inventory for greenhouse gas (GHG) emissions that includes estimates for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons, and perfluorocarbons. Projects would have the potential of creating GHG emissions; therefore, project construction and operational GHG emissions estimates would be estimated prior to construction of program facilities to determine if emissions will be less than SCAQMD adopted significance thresholds for individual projects.

The following provides the significance determination of specific CEQA questions relating to GHG emissions.

*7a) Would the program generate Greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Significance Determination: Less Than Significant Impact

*7b) Would the program conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Significance Determination: Less Than Significant Impact

### VI.3.8 Hazards and Hazardous Materials

Potential hazards associated with the implementation of program facilities during construction involves the use of hazardous substances used to operated construction equipment including fuel, lubricants, adhesives, solvents, and asphalt. These hazardous materials related to construction could potentially result in environmental impacts through accidental discharge. Project proponents and contractors would ensure the transport, use, and disposal of hazardous materials would be conducted in accordance with applicable federal and State laws.

Construction of program facilities would require conformance with the NPDES Construction General Permit, which would include a SWPPP and appropriate Best Management Practices to mitigate potential impacts, as discussed in Section VI.3.6. These Best Management Practices would include standard industry measures and guidelines contained in the NPDES Construction General Permit text. Implementation of these Best Management Practices would reduce potential impacts associated with construction related hazardous material to less than significant.

To assess the potential to encounter hazardous waste or contaminated soil during construction of program facilities, project proponents would need to consult the SWRCB's GeoTracker Database and the California Department of Toxic Substances Control (DTSC) EnviroStor database, which provide information on hazardous materials sites, including information on completed inspections, enforcement/corrective actions, and cleanup status. If construction of program facilities would occur on or near a hazardous materials site, project proponents should make contractors and workers aware of the presence or likely presence of hazardous materials. As applicable, the contractor should hold all necessary licenses and certifications to perform the construction operations that may occur in the areas impacted with hazardous materials. During excavation and construction activities, soil would be monitored for the presence of discolored or odorous soil. In the event that contaminated soil is contaminated, the following additional mitigation measures would be implemented to ensure that impacts would be less than significant:

- The site shall be evaluated by a qualified hazardous materials professional and handled in accordance with applicable environmental laws and regulations.
- Impacted soil shall be exported to an approved off-site disposal or recycling facility, unless evaluated and approved by a local regulatory agency for use as backfill.
- Appropriate dewatering methods shall be implemented, which may require a groundwater treatment system if in areas with hazardous materials.

The use of recycled water for groundwater recharge is regulated by the State Water Resources Control Board Division of Drinking Water (DDW) and the RWQCB. Several safety measures are required in order to protect public drinking sources from receiving high concentrations of recycled water. In addition, all recycled water pipelines would be constructed according to regulatory requirements to prevent potential cross contamination with potable water supplies and pipelines, including proper vertical and horizontal separation with potable water pipelines. Potential impacts to water quality are discussed further in Section IV.3.9.

The following provides the significance determination of specific CEQA questions relating to hazards and hazardous materials.

*8a) Would the program create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Significance Determination: Less Than Significant Impact

*8b) Would the program 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?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

8c) *Would the program emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

8d) *Would the program be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Significance Determination: Less Than Significant Impact

8e) *Would the program 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 result in a safety hazard for people residing or working in the project area?*

Significance Determination: No Impact

8f) *Would the program 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?*

Significance Determination: No Impact

8g) *Would the program impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Significance Determination: No Impact

8h) *Would the program expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Significance Determination: No Impact

### **VI.3.9 Hydrology and Water Quality**

The San Gabriel Valley groundwater basin is located within the San Gabriel River and Rio Hondo watershed. Groundwater is a significant source of potable water supply in the San Gabriel Valley. With

the exception of local areas of high groundwater contamination, the quality of the groundwater in the Main Basin meets primary and secondary drinking water standards established by the DDW of the SWRCB.

The RWQCB and the DDW regulate groundwater replenishment projects using recycled water under numerous state laws and regulations, including the Water Quality Control Plan, Los Angeles Region (Basin Plan) and SWRCB Policies. The Basin Plan has specified that one of the beneficial uses of the Main Basin underlying the SFSG is for municipal and domestic water supply (MUN). Consequently, the RWQCB has established narrative and numeric Water Quality Objectives that must be attained or maintained to protect these beneficial uses. Based on the MUN beneficial use designation, the Basin Plan includes groundwater objectives based on the State Primary and Secondary maximum contaminant levels (MCLs), a numeric objective for coliform organisms, a narrative objective to prevent taste and odor issues, and basin-specific mineral objectives. Recycled water used for groundwater replenishment has the potential to impact water quality in the Main Basin.

Recycled water from the SJCWRP exceeds the mineral RWQCB Water Quality Objective for total dissolved solids (TDS) (450 mg/L) and chloride (100 mg/L) with five-year annual average (2009-2013) concentrations of 535 mg/L and 110 mg/L, respectively. The five-year annual average of sulfate (85 mg/L) and nitrate (27 mg/L) in the recycled water from the SJCWRP West are below the RWQCB Water Quality Objectives of 100 mg/L and 45 mg/L; however, these concentrations are above the ambient groundwater sulfate and nitrate concentrations. Accordingly, implementation of the IRRP may result in a net increase in the overall Main Basin concentrations for TDS, chloride, sulfate, and nitrate.

The Recycled Water Policy sets an interim goal that no single project is to use more than 10 percent of the available assimilative capacity, or combination of projects to use more than 20 percent of the available assimilative capacity. Consequently, as part of the SNMP, the antidegradation analysis calculated the collective amount of water that could be replenished in the San Gabriel Basin with hypothetical water qualities without exceeding the very conservative value of 10 percent of the available assimilative capacity.

The Upper District IRRP impacts on the Basin concentrations were analyzed to determine the potential utilization of the Assimilative Capacity (AC) resulting from long term recharge of recycled water. The constituent concentrations in the groundwater will eventually stabilize and will not increase despite continued recharge of recycled water. The TDS concentration in the groundwater is estimated to reach equilibrium after more than 100 years of recycled water recharge under the same quality assumptions. Once equilibrium is reached, the TDS concentration in the groundwater will be 364 mg/L, an increase of seven (7) mg/L, which represents approximately 7.2 percent utilization of the available AC. The IRRP utilizes a

smaller percentage of the available assimilative capacity of the other constituents analyzed once equilibrium is reached: 1.2 percent for nitrate, 4.6 percent for chloride, and 2.7 percent for sulfate.

The increase in TDS concentration falls within the SWRCB's recommendation that a single project utilize less than 10 percent of the assimilative capacity to prevent significant degradation to groundwaters. Although the chloride and TDS concentrations in tertiary treated recycled water exceed the water quality objectives, the assimilative capacity is great enough such that the minor water quality objective exceedances do not substantially degrade the overall quality of the Main Basin. These estimates of the assimilative capacity utilization are also conservative in nature because the SNMP analyzed the IRRP as the single recycled water project in the basin with loading contributions from direct reuse recycled water projects already accounted for in the overall balance models for the basin. However, the SWRCB recommends that multiple recycled water projects combined limit their utilization of the assimilative capacity to 20 percent. Therefore, if all of the recycled water projects were considered concurrently, the IRRP could utilize a larger percentage of the assimilative capacity. The complete analysis for the IRRP is provided in Table III.14b.

The anti-degradation analysis in the SNMP also evaluated three hypothetical scenarios of varied water quality. While the hypothetical scenarios do represent likely imported water replenishment sources (State Water Project and Colorado River), the water quality represents extreme cases that do not reflect current and projected imported water quality, stormwater quality, or recycled water quality. Three hypothetical scenarios presenting varied recycled water quality for nitrate, chloride, sulfate, and TDS were evaluated to determine the maximum volume of recycled water under varied quality conditions that could be recharged annually without cumulatively exceeding the 10 percent of the AC. The water quality selected for analysis in the hypothetical scenarios is representative of water quality from likely replenishment water sources. Historical supply sources for replenishment water have been primarily stormwater runoff and SWP, with Colorado River water and recycled water contributing to groundwater replenishment to a lesser extent. Scenario 1 represents the likely water quality of potential replenishment water from the Colorado River with a high sulfate concentration. Scenario 2 represents likely water quality of potential replenishment water from the State Water Project experiencing salt water intrusion with a high chloride concentration. Scenario 3 represents likely water quality of potential replenishment water with a high sulfate concentration along with a lower nitrate concentration. These scenarios only evaluated the impacts resulting from direct spreading of replenishment water; therefore, it should be noted that indirect use of replenishment water (such as would be likely with recycled water reuse) would allow recharge of a significantly greater volume of replenishment water before resulting in an equivalent utilization of the assimilative capacity.



Maintaining compliance with the applicable DDW Groundwater Replenishment Regulations and the SWRCB Recycled Water Policy will maintain the quality of the Main Basin. According to the Groundwater Replenishment Regulations, the following regulatory requirements would be required to protect potable production wells:

- A potable well control zone will be established to allow for sufficient underground recycled water retention time for pathogen reduction, emergency response time, and adequate mixing with diluent water to ensure the percentage of recycled water does not exceed the maximum allowed. Watermaster will not approve applications for new wells to be drilled within this potable well control zone.
- Potable wells will not be located within 1,000 feet of the SFSG.
- A monitoring program will be established.
- Employees will receive proper training.

There may be minor localized modifications to existing drainage during trench work for the pipeline, which would be considered less than significant.

The following provides the significance determination of specific CEQA questions relating to hydrology and water quality.

*9a) Would the program violate any water quality standards or waste discharge requirements?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*9b) Would the program 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)?*

Significance Determination: No Impact

*9c) Would the program 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?*

Significance Determination: Less Than Significant Impact

9d) *Would the program 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 offsite?*

Significance Determination: Less Than Significant Impact

9e) *Would the program 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?*

Significance Determination: No Impact

9f) *Would the program otherwise substantially degrade water quality?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

9g) *Would the program 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?*

Significance Determination: No Impact

9h) *Would the program place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

Significance Determination: Less Than Significant Impact

9i) *Would the program 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?*

Significance Determination: No Impact

9j) *Would the program inundation by seiche, tsunami, or mudflow?*

Significance Determination: No Impact

### **VI.3.10 Land Use/Planning**

Construction of program facilities would not physically divide an established community. During construction, community access may be temporarily and minimally restricted (see Section VI.3.16); however, once construction is completed, program facilities would not interfere with community access. Program facilities would be designed such that they were compatible with General Plans and planned land

use for Los Angeles County and local impacted cities; therefore, impacts to land use and planning would be considered less than significant.

The following provides the significance determination of specific CEQA questions relating to land use and planning.

*10a) Would the program physically divide an established community?*

Significance Determination: Less Than Significant Impact

*10b) Would the program 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?*

Significance Determination: Less Than Significant Impact

*10c) Would the program conflict with any applicable habitat conservation plan or natural community conservation plan?*

Significance Determination: Less Than Significant Impact

### **VI.3.11 Mineral Resources**

Mineral resources, including mineral and aggregate deposits, are present in the washes along the southerly foothills of Los Angeles County. The California Geological Survey has classified Los Angeles County into Mineral Resource Zones (MRZs). Portions of the San Gabriel Valley is designated as MRZ-2, indicating existence of mineral deposits that meet certain criteria for value and marketability; however, not all MRZ-2 areas have mineral resource recovery sites so it is unlikely program facilities would impact mineral resources. If pits previously used for the mining of mineral resources are converted to spreading facilities, project proponents would need to evaluate specific potential impacts to mineral resources.

The following provides the significance determination of specific CEQA questions relating to mineral resources.

*11a) Would the program result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

Significance Determination: Less Than Significant Impact

*11b) Would the program 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?*

Significance Determination: Less Than Significant Impact

### VI.3.12 Noise

During construction and operation of program facilities, noise environments along pipeline corridors and near spreading facilities may potentially be impacted. The program facilities are not expected to result in a significant impact related to ambient noise levels. Sensitive noise receptors that would need to be evaluated for project-specific noise impacts include local schools and hospitals. Implementation of the following mitigation measures will reduce noise impacts to less than significant:

- Construction noise must comply with jurisdictional noise ordinances, and as such will be conducted between 7:00 AM and 7:00 PM, Monday through Friday with the exception of holidays.
- All equipment will have proper mufflers equal or superior to noise attenuation provided by the manufacturer of the equipment.

If sensitive species exist near the program facilities, additional mitigation measures may be required to reduce construction related noise levels to acceptable measures.

The following provides the significance determination of specific CEQA questions relating to noise.

*12a) Would the program 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?*

Significance Determination: Less Than Significant Impact

*12b) Would the program exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Significance Determination: Less Than Significant Impact

*12c) Would the program a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Significance Determination: No Impact

*12d) Would the program a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*12e) Would the program 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 or working in the project area to excessive noise levels?*

Significance Determination: No Impact

*12f) Would the program for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

Significance Determination: No Impact

### **VI.3.13 Population and Housing**

No proposed program facilities involve new housing or business developments; therefore, program facilities would not directly induce population growth. No housing or people would be displaced resulting from the program facilities.

Indirect population growth would not likely result from the construction of program facilities because new services and infrastructure would not be extended to new areas such that would allow for the development of land. However, there is a potential for indirect population growth to occur resulting from increased economic opportunities, including job opportunities created by the program, and increased reliable water supply would remove a natural obstacle to population growth. These potential population increases are anticipated to be able to be absorbed by the community.

The following provides the significance determination of specific CEQA questions relating to population and housing.

*13a) Would the program induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

Significance Determination: Less Than Significant Impact

*13b) Would the program displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

Significance Determination: No Impact

*13c) Would the program displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

Significance Determination: No Impact

#### **VI.3.14 Public Services**

Implementation of program facilities would not result in the need for new or physically altered governmental facilities including fire protection, police protection, schools, parks, or other public facilities. There is a low probability that police or fire protection may be required during construction or operation of program facilities; however, these impacts would be considered less than significant and would not impact response times. As discussed in Section VI.3.14, emergency vehicle access will be maintained at all times. As discussed in Section VI.3.14, program facilities do not include new housing or development projects that would increase the demand for schools, parks, or other parks of public facilities; therefore, no impact would occur.

The following provides the significance determination of specific CEQA questions relating to public services.

*14a) Would the program result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

*Fire Protection?*

*Police Protection?*

*Schools?*

*Parks?*

*Other public facilities?*

Significance Determination: No Impact

### VI.3.15 Recreation

Program facilities would not cause an increase in the use of existing neighborhood and regional parks or other recreational facilities; thus, no physical deterioration would occur resulting from program facilities. Construction of program facilities may result in minor, temporary impacts to recreationists resulting from noise, dust, and road closures for vehicles, bicyclists, and/or pedestrians. Once operational, program facilities would not result in changes to the population requiring additional new or expanded recreational opportunities.

The following provides the significance determination of specific CEQA questions relating to recreation.

*15a) Would the program 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?*

Significance Determination: No Impact

*16a) Does the program include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Significance Determination: No Impact

### VI.3.16 Transportation/Traffic

During operations of the program facilities, increased traffic would result from infrequent maintenance, inspection, or emergency repair activities, which would have sparse and minimal impacts to transportation and traffic. Program facilities would not impact existing performance of the highway and roadway system governed by the Los Angeles County Metropolitan Transit Authority's 2010 Congestion Management Plan. Construction of program facilities could occur in roads and paths which would result in temporary impacts to transportation and traffic that would require mitigation. Traffic congestion during construction would likely increase and could impact emergency access unless mitigation is incorporated. Routine mitigation measures are required to reduce traffic impacts during construction so as not to conflict with any applicable plan, ordinance, policy, or program. These measures include the following:

- Access to properties along the construction work zone will be maintained.
- Emergency vehicle access will be maintained at all times.
- All cuts to roadways will be covered with “plates”, when appropriate, during non-working hours.
- Appropriate signage will be posted informing the public of construction activities, work zone areas, road closures, and detour routes, as applicable.
- A traffic management plan will be developed by the contractor and approved by the appropriate jurisdiction prior to commencing construction.
- Haul trucks will be directed via the shortest routes on arterial streets, avoiding impacts to residential streets.

Program facilities would not include aviation components or structures where height would be an aviation concern; therefore, air traffic patterns would not be impacted. Program facilities would not include design features that would affect traffic safety, such as sharp curves or dangerous intersections, nor would it cause incompatible uses, such as farm equipment, on local roads. The temporary increase in traffic due to construction is a compatible use that would not pose a hazard to traffic on the affected roads.

The following provides the significance determination of specific CEQA questions relating to transportation and traffic.

*16a) Would the program conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*16b) Would the program 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?*

Significance Determination: Less Than Significant Impact

*16c) Would the program 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?*

Significance Determination: No Impact

*16d) Would the program substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*



Significance Determination: No Impact

*16e) Would the program result in inadequate emergency access?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

*16f) Would the program conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

### **VI.3.17 Utilities and Service Systems**

Program facilities would not require the construction or expansion of wastewater facilities or exceed applicable wastewater treatment requirements because no facility will be constructed that would generate sewage. Program facilities could require the construction or expansion of new storm water drainage facilities in order to divert stormwater to spreading facilities for groundwater replenishment which would require mitigation measures to be implemented on an individual project basis to reduce environmental impacts.

No new potable water or wastewater treatment facilities or expansion of existing facilities would be required. The operation of program facilities would result in a beneficial impact to regional water supply by utilizing and optimizing recycled water and stormwater for groundwater replenishment which would otherwise be wasted, resulting in a decreased need for imported water.

Construction of the Proposed Project is not anticipated to generate substantial volumes of solid waste, as excavated materials would be reused as backfill, where possible. Solid waste debris would be disposed of at a permitted landfill within the capacity of the landfills serving the region. Operations of the program facilities would not generate solid waste or affect landfill capacity, and would comply with federal, state, and local statutes and regulations related to solid waste; therefore, no impact would occur.

The following provides the significance determination of specific CEQA questions relating to utilities and service systems.

*17a) Would the program exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Significance Determination: No Impact

17b) *Would the program 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 effects?*

Significance Determination: No Impact

17c) *Would the program 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 effects?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

17d) *Would the program have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Significance Determination: No Impact

17e) *Would the program result in a determination by the wastewater treatment provider which 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?*

Significance Determination: No Impact

17f) *Would the program be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Significance Determination: No Impact

17g) *Would the program comply with federal, state, and local statutes and regulations related to solid waste?*

Significance Determination: No Impact

### **VI.3.18 Mandatory Findings of Significance**

The implementation of program facilities would potentially result in significant environmental impacts, unless mitigation is incorporated. The following provides the significance determination of the mandatory findings of significance.

18a) *Would the program 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?*

Significance Determination: Less Than Significant Impact with Mitigation Incorporated

Implementation of the program facilities would potentially have adverse impacts on biological resources, including critical habitats. In addition, the Project may potentially result in impacts to unknown buried cultural resources and/or paleontological resources. The potential to degrade environmental quality would be reduced to below a level of significance through implementation of mitigation measures specified in Sections VI.3.4 and VI.3.5 plus any project specific mitigation measures. See Sections VI.3.4 and VI.3.5 for further discussion of these issue areas.

*18b) Would the program 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)?*

Significance Determination: Less Than Significant Impact

Cumulative impacts are those impacts which, in conjunction with impacts due to other projects in the vicinity or with similar characteristics, would potentially result in adverse effects on the environment greater in significance than just the Proposed Project impacts alone. Therefore, a cumulative impact may be considered less than significant when evaluated in isolation, but could become significant when evaluated along with other projects.

Implementation of the program facilities would not result in impacts that are individually insignificant, but cumulatively considerable and will not cause significant degradation to the environment. The implementation of program facilities would result in greater management of salt and nutrient loadings while still allowing for the increased responsible use of recycled water and local water.

*18c) Would the program have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Significance Determination: Less Than Significant Impact

Implementation of program facilities would not result in environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Adherence to regulatory codes, ordinances, regulations, standards, and guidelines, in conjunction with program and project-specific mitigation measures including, but not limited to, those related to air, hazardous materials, water quality, noise, and transportation (see Sections VI.3.3, VI.3.8, VI.3.9, VI.3.12, and IV.3.16) would ensure that construction and operation of the program facilities would not result in substantial adverse direct or indirect effects on human beings. In addition, all resource topics associated with the program have been analyzed in accordance with State CEQA Guidelines and found to pose no impact, less than significant impact, or less than significant impact with mitigation. Hence, further environmental analysis is not required.

### VI.3.19 Other Considerations

#### **Energy Requirements**

Implementation of program facilities to increase the use of recycled water and local stormwater will require significantly less energy per foot for conveyance within the San Gabriel Valley compared to importing water from the State Water Project; thus, the Recommended Program Alternative results in a beneficial impact with regards to energy consumption and efficiency. As an example of a comparison of energy consumption, Table 1 below shows a comparison of the estimated IRRP energy requirements for conveyance to the estimated State Water Project energy requirements.

**TABLE 1. ENERGY CONSUMPTION BY WATER SOURCE COMPARISON.**

<b>Water Sources</b>	<b>Conveyance Energy Consumption (kWh/AF)</b>
East Branch of State Water Project <sup>1</sup>	3,200
SJCWRP <sup>2</sup>	460
Net Energy Savings	2,740

Source: Draft IRRP NEPA Environmental Assessment.

1. Source: California Energy Commission 2007 – Integrated Energy Policy Report Committee Workshop. 2007
2. Assumes operation of 1,425 horse power pump station for six months per year.

#### **Irreversible and Unavoidable Impacts**

CEQA Guidelines (California Code of Regulations, Section 15126.2(c)) requires identification of potential significant, irreversible environmental changes that could result from the implementation of the Recommended Program Alternative. Examples of such irreversible changes include the commitment of

nonrenewable resources to uses that future generations will not be able to reverse, irreversible damage that may result from accidents associated with a project, or irretrievable commitment of resources. Implementation of the Recommended Program Alternative and construction of program facilities would irreversibly require construction materials and non-renewable energy resources by way of materials, labor, and energy. These materials and resources could include, but are not limited to, lumber and other forest products; sand and gravel; asphalt; petrochemical construction materials; steel; copper; lead and other metals, water; etc. Although the Recommended Program Alternative would require materials, labor, and energy, these non-renewable resources do not represent a substantial irreversible commitment of resources.

In accordance with the Policy and the Governor's recent drought proclamations, implementation of the Recommended Program Alternative is both necessary and beneficial because it reduces reliance on limited potable imported water supplies by increasing the use of recycled water and local water sources. In addition, recycled water is a renewable resource, and therefore, the increased use resulting from the Recommended Program Alternative would not result in an irretrievable commitment of nonrenewable resources.

#### **VI.3.20 Environmental Analysis of Other Alternatives**

##### Alternative 1: No Project

As discussed in Section V.1.1, this Program Alternative does not include adoption of a SNMP and consequently would be inconsistent with the mandates of the State Recycled Water Policy which requires that a SNMP be adopted; therefore, the implementation of Alternative 1 is infeasible and not recommended. Alternative 1 was included in this analysis as a means to compare the impacts of implementing the Recommended Program Alternative with the current status quo.

Because Alternative 1 does not involve the implementation of new recycled water projects or new spreading facilities for stormwater and/or imported water, Alternative 1 would have no impact on the following resource categories:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials

- Hydrology and Water Quality
- Land Use and planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Alternative 1 would result in continued use of State Water Project imported water for groundwater replenishment and requirements according to the Judgment which is costly, unreliable, and energy intensive. As shown in Table 1, local water sources have the potential to significantly reduce energy consumption in the San Gabriel Valley.

Alternative 1 would not provide the benefit of having more reliable and secure local water sources that results from increased use of recycled water and stormwater. Without having a framework for long-term management of salts and nutrients provided in the SNMP, individual projects would have a greater potential of causing cumulative adverse effects on the San Gabriel groundwater basin.

#### Alternative 2: Planned Recycled Water Projects

Alternative 2 is the program alternative which assumes the RWQCB will adopt the SNMP for the San Gabriel Valley Groundwater Basin and the planned recycled water project (IRRP) will be implemented. All of the potential impacts of Alternative 2 have been evaluated within the evaluation of the Recommended Program Alternative. Alternative 2 only includes the implementation of the IRRP and does not include implementation of expanded spreading facilities and potential recycled water projects. Because both Alternative 2 and the Recommended Program Alternative involve installing pipeline, several of the potential environmental impacts are the same. The additional impacts associated with implementing multiple recycled water, stormwater, and imported water projects, as proposed in the Recommended Program Alternative have been evaluated and determined to not have a significant impact on the environment.

## SECTION VII FINDINGS AND DETERMINATION

The RWQCB, with assistance from Watermaster representing San Gabriel stakeholders, has balanced the economic, legal, social, technological, and other benefits of the Recommended Program Alternative of the San Gabriel SNMP against the potential, unavoidable, and inherent environmental risks identified in this SED. The program-level environmental analysis included in this SED identifies reasonably foreseeable impacts associated with the implementation of the Recommended Program Alternative and provides mitigation measures that can be applied to individual projects implemented as part of the program in order to reduce impacts below significance thresholds. The recommended Program Alternative allows for flexibility for stakeholders and project proponents to determine the most feasible and environmentally safe manner of implementation. The RWQCB has determined that the identified potential environmental impacts associated with each resource category can be mitigated such that the impacts can be reduced to less than significant thresholds.

Potential impacts must also be mitigated at the project level because particular designs and sites are not specified in the SNMP. At the program level, a more specific conclusion would be speculative. Project proponents would be responsible for implementing the mitigation measures identified in this SED conjointly, as applicable, with project-specific mitigation measures identified in project level CEQA analyses and related environmental studies conducted. A draft CEQA Initial Study and draft NEPA Environmental Assessment for the IRRP are currently being finalized, wherein specific project level mitigation measures are identified.

Per Water Code Section 13360, the RWQCB does not have legal authority to specify the manner of compliance with its orders or regulations, and therefore, cannot dictate that an appropriate location be selected for any particular project, that it be designed consistent with standard industry practices, or that routine and ordinary mitigation measures be employed. Project proponents have the jurisdiction and authority to determine these measures and should employ alternatives and mitigation measures to reduce any impacts to the extent feasible (California Code of Regulations, Title 14, Section 15091(a)(2)).

The implementation of the SNMP will satisfy the requirements of the Policy by providing a framework for the long-term management of salts and nutrients in the San Gabriel groundwater basin, while encouraging and allowing for increased use of recycled water areas where salt and nutrient concentrations

would exceed the water quality objectives for groundwater established in the Basin Plan. The adoption of this SED will fulfill the CEQA requirements for the implementation of the SNMP.

The SNMP is both necessary and beneficial. The implementation of the SNMP, and management strategies contained therein, will fulfill the requirements of the Policy and provide the framework for the environmentally safe long-term management of salts and nutrients in the San Gabriel groundwater basin. To the extent that the alternatives, mitigation measures, or both, that are examined in this analysis are not deemed feasible by the stakeholders and local agencies, the necessity of complying with the Policy and implementing the required SNMP remains.

### DETERMINATION

On the basis of this initial evaluation for the San Gabriel Salt and Nutrient Management Plan, which collectively provide the required information:

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Agency

Note: Authority Cited Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21082.1, 21083.3, 21093, 21094, 21151, Public Resources Code.



## SECTION VIII REFERENCES

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- Stetson Engineers, Inc., Helix Environmental Planning, Inc. 2016. Draft IRRP NEPA Environmental Assessment.