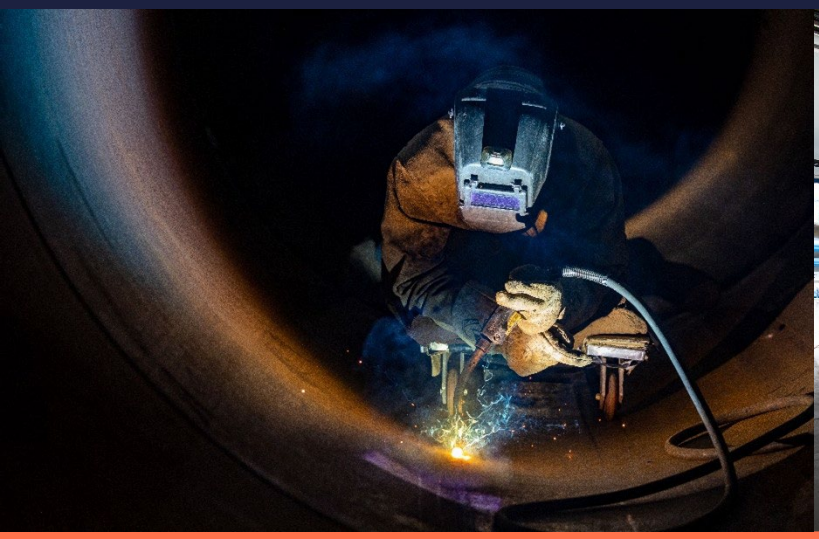
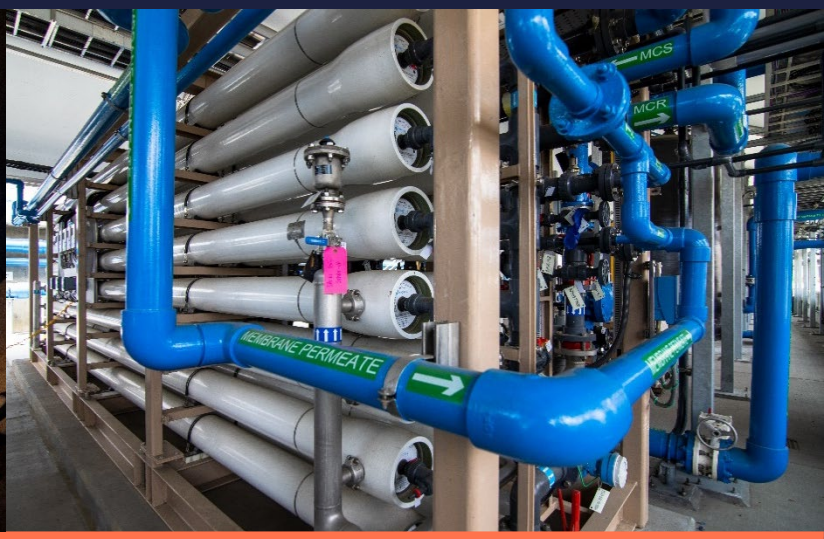
PUREWATER SOUTHERN CALIFORNIA

Volume 1 – Draft Environmental Impact Report

MAY 2025

State Clearinghouse No. 2022090654
Metropolitan Report No. ER 1715





The Metropolitan Water District of Southern California

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Pure Water Southern California

Draft Environmental Impact Report

State Clearinghouse No. 2022090654
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Lead Agency:

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May 2025

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
ADWR	Arizona Department of Water Resources
AF	acre-foot/feet
AFY	acre-feet per year
AIA	Airport Influence Area
AOP	advanced oxidation process
AQMP	air quality management plan
ASCE	American Society of Civil Engineers
AWP Facility	Advanced Water Purification Facility
BAC	biologically activated carbon
BACM	Best Available Control Measures
BMP	Best Management Practices
Bay-Delta	Sacramento-San Joaquin River Delta
Board	Metropolitan's Board of Directors
BSA	Biological Study Area
Btu	British thermal units
BUOW	burrowing owl
CAAQS	California Ambient Air Quality Standards
CAGN	coastal California gnatcatcher
CalEEMod	California Emissions Estimator Model
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalGEM	California Department of Conservation's Geologic Energy Management Division
CALGreen	California Green Building Standards
Caltrans	California Department of Transportation
CAMP4W	Climate Adaptation Master Plan for Water
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASQA	California Storm Water Quality Association
CAWCD	Central Arizona Water Conservation District
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	Constituents of Emerging Concern
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations

CGP	Construction General Permit
CGS	California Geological Survey
CM	Construction Method
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Los Angeles
CRA	Colorado River Aqueduct
CREC	Controlled Recognized Environmental Conditions
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWC	California Water Code
dBA	A-weighted decibels
DDT	dichlorodiphenyltrichloroethane
DDW	Division of Drinking Water
DPM	diesel particulate matter
DPR	direct potable reuse
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EC	environmental commitment(s)
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
EO	Executive Order
EOSi	Environmental Operating Solutions, Inc.
EV	electric vehicle
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	California Fish and Game Code
FORCO	Fletcher Oil and Refining Company
GHG	greenhouse gas
GSP	groundwater sustainability plan
GWh	gigawatt hours
GWRS	Orange County Water District's Groundwater Replenishment System
HCP	Habitat Conservation Plan
HI	hazard index
cal	Hazardous Materials Business Plan
hp	horsepower

HRA	health risk assessment
HREC	Historical Recognized Environmental Condition
I-	Interstate
IBC	International Building Code
IGP	Industrial General Permit
IPCC	Intergovernmental Panel on Climate Change
IPR	indirect potable reuse
IRP	Integrated Water Resources Plan
ISI	Institute for Sustainable Infrastructure
ITP	incidental take permit
IWDP	Industrial Wastewater Discharge Permit
JOS	Joint Outfall System
kBtu	thousand British thermal units
kV	kilovolt
kW	kilowatt
kWh	kilowatt hours
L	liter
LACFCD	Los Angeles County Flood Control District
LACPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
LAEDC	Los Angeles County Economic Development Corporation
LBVI	least Bell's vireo
L_{DN}	Day Night sound level
L_{EQ}	time-averaged noise levels
LST	localized significance threshold
MATES	Multiple Air Toxics Exposure Study
MBR	membrane bioreactor
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MCV	Manual of California Vegetation
Metro	Los Angeles County Metropolitan Transportation Authority
Metropolitan	Metropolitan Water District of Southern California
MF	membrane filtration
mg	milligrams
MGD	million gallons per day
MICR	maximum individual cancer risk
MLD	Most Likely Descendant
MM	mitigation measure(s)
MMRP	Mitigation Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
MSL	mean sea level
MT	metric tons
MUTCD	California Manual of Uniform Traffic Control Devices

MW	megawatt
MWD	municipal water district
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NHPA	National Historic Preservation Act
NIC	Grace F. Napolitano Pure Water Southern California Innovation Center
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NSLU	noise sensitive land use
NWRI	National Water Research Institute
OA	Los Angeles County Operational Area
OAEOP	Los Angeles County Operational Area Emergency Operations Plan
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
PCB	polychlorinated biphenyls
PCE	tetrachloroethylene
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PMMP	Paleontological Monitoring and Management Plan
PPV	peak particle velocity
PRC	Public Resources Code
PRPA	Paleontological Resources Preservation Act
Pure Water	Pure Water Southern California
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Regional Board	Regional Water Quality Control Board
RNA	Regional Needs Assessment
RO	reverse osmosis
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RRWP	Regional Recycled Water Program
RTP	Regional Transportation Plan
RWA	raw water augmentation

SANDAG	San Diego Association of Governments
Sanitation Districts	Los Angeles County Sanitation Districts
SB	Senate Bill
SCAB	South Coast Air Basin
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
SEA	Significant Ecological Areas
SF	square foot/feet
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SNMP	salt and nutrient management plan
SNWA	Southern Nevada Water Authority
SO_2	sulfur dioxide
SOC	Statement of Overriding Considerations
SoCalGas	Southern California Gas Company
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SRA	source receptor area
SSC	State Species of Special Concern
SSSP	Site-Specific Safety Plan
STC	Sound Transmission Class
SWFL	southwestern willow flycatcher
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	traffic analysis zone
TCE	trichloroethylene
TCP	Traffic Control Plan
TCR	Tribal Cultural Resource
TDS	total dissolved solids
TMDL	total maximum daily load
TMP	Traffic Management Plan
TWA	treated water augmentation
UIC	underground injection control
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UV	ultraviolet light

UWMP	Urban Water Management Plan
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles travelled
VOC	volatile organic compound(s)
Warren Facility	A.K. Warren Water Resource Facility
WATCH	Work Area Traffic Control Handbook
WDR	Waste Discharge Requirement
WIFL	willow flycatcher
WRD	Water Replenishment District
WTP	water treatment plant
WQS	water quality standards
ZEV	Zero-Emissions Vehicle

1.0 INTRODUCTION

This Environmental Impact Report (EIR) was prepared by The Metropolitan Water District of Southern California (Metropolitan) for the proposed Pure Water Southern California (Pure Water)[1] program. Pure Water is a partnership between Metropolitan and the Los Angeles County Sanitation Districts (Sanitation Districts) to beneficially reuse wastewater that currently is being cleaned and discharged to the Pacific Ocean from the Sanitation Districts' A.K. Warren Water Resource Facility (Warren Facility)[2] in the City of Carson. Pure Water would further treat this cleaned wastewater through a new Advanced Water Purification Facility (AWP Facility) to produce up to 150 million gallons per day (MGD) of purified water. The AWP Facility would be constructed on currently undeveloped property within and adjacent to the Warren Facility. The purified water would be transported and distributed via new conveyance facilities as far north as the City of Azusa and as far east as the City of La Verne. The purified water would be used primarily to recharge the West Coast, Central, and Main San Gabriel groundwater basins through spreading facilities and injection wells and to augment water supplies at existing water treatment plants (WTPs) owned and operated by Metropolitan within its service area.

1.1 PURPOSE OF THE EIR

This EIR assesses the potential environmental effects of Pure Water and was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 *et seq*.) and the Guidelines for Implementation of CEQA (CEQA Guidelines) published by the Natural Resources Agency of the State of California (California Code of Regulations [CCR], Title 14, Section 15000 *et seq*.). As the lead agency under CEQA (PRC Section 21067), Metropolitan is responsible for the preparation of the EIR, which will be used by Metropolitan's Board of Directors (Board) and the Sanitation Districts' Board in consideration of whether to approve Pure Water.

This EIR is intended to inform governmental decision makers and the public about the potential significant environmental effects of Pure Water and to identify ways that such effects can be avoided or reduced by making changes to the program, selecting an alternative, and/or adopting feasible mitigation measures (PRC Section 21002.1; CEQA Guidelines Sections 15002, 15021, and 15126.4).

Design, location, and environmental impact information for Pure Water's facilities and components currently exist at varying levels of detail. As such, the EIR provides both program-level and project-level analyses depending on the nature and scope of information available for each facility or component of the program (CEQA Guidelines Sections 15161, 15165, and 15168). Metropolitan, the Sanitation Districts, and other public agencies will consider and rely on the information in this EIR prior to taking certain discretionary actions related to implementation of Pure Water, such as issuing approvals, permits, or licenses; entering into construction contracts or agreements; or providing grants, loans, or other forms of financial assistance. In doing so, any agency relying on this EIR for a future discretionary action will determine whether the potential environmental impacts associated with that action are addressed in the certified EIR or, alternatively, whether additional environmental review and analysis are required. The nature and scope of any additional review and analysis will be determined in

[1] Pure Water formerly was referred to as the Regional Recycled Water Program or RRWP. These terms may appear in documents predating this EIR.

[2] The Warren Facility formerly was referred to as the Joint Water Pollution Control Plant, Joint Plant or JWPCP. These terms may appear in documents predating this EIR.

accordance with the criteria set forth in PRC Section 21166 and CEQA Guidelines Sections 15162, 15163, 15164, and 15168.

1.2 ENVIRONMENTAL REVIEW PROCESS

1.2.1 Scoping for the Draft EIR

In accordance with Section 15082 of the CEQA Guidelines, Metropolitan circulated a Notice of Preparation (NOP) of a Draft EIR on September 30, 2022, for review by applicable local, state, and federal agencies and the public. The NOP was published in the Los Angeles Times, Ventura County Star, Orange County Register, Riverside Press-Enterprise, Inland Valley Daily Bulletin, and San Diego Union-Tribune; posted on Metropolitan's website; filed with Los Angeles and San Bernardino County clerks; and submitted to the State Clearinghouse for distribution to relevant state agencies. The State Clearinghouse reference number for Pure Water is **SCH No. 2022090654**, and all CEQA postings regarding Pure Water can be found at: https://ceqanet.opr.ca.gov/[3].

The NOP provided a general description of the facilities and components associated with Pure Water, figures showing the anticipated location of such components and facilities, and a summary of probable environmental effects to be addressed in the Draft EIR. The NOP provided the public and interested public agencies with the opportunity to provide comments regarding Pure Water, in general, and on the scope and content of the Draft EIR, in particular.

Metropolitan hosted virtual scoping meetings on October 12, October 18, October 27, and October 29, 2022, to provide information on Pure Water and the EIR process, answer questions from the public, and solicit public comments on the NOP and Pure Water. In addition, Metropolitan has been conducting a robust outreach effort related to Pure Water. During the CEQA scoping period, this effort included sending an email blast to over 1,000 contacts on Metropolitan's Pure Water email list (community leaders, tribal members, environmental organizations, business groups, students, and general members of the public); mailing postcards to addresses within 500 feet of the proposed facilities and components; placing ads in English and Spanish newsletters; distributing a press release; distributing flyers to public libraries and other information hubs; sharing information on Metropolitan's and the Sanitation Districts' social media accounts; hosting a booth at various local events; conducting meetings with business organizations, environmental groups, and community-based organizations; and partnering with community-based organizations to provide scoping information to underserved communities in the program area.

During the scoping period, 39 comment letters were received, including 4 from state agencies, 3 from regional agencies, 13 from local agencies, 4 from Tribes, 6 from organizations, and 9 from individuals. The NOP and associated comment letters are included in Appendix A of this EIR. Based on the anticipated nature, scope, and locations of the Pure Water components and facilities, and the comments received during public review of the NOP, Metropolitan determined that the EIR should analyze in detail potential impacts with respect to the following environmental resource categories:

- Air Quality
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning

[3] A new website is currently in development but is not active as of the time of this publication. The new website is anticipated to be https://ceqanet.lci.ca.gov.

- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Noise
- Transportation
- Tribal Cultural Resources

Although the NOP anticipated that the EIR also would analyze impacts to Utilities and Service Systems, based on subsequent review it was determined that a separate detailed analysis of this resource category was not required. The need for and use of various utilities and service systems is integral to Pure Water and is discussed throughout the EIR. Potential impacts associated with the relocation, construction, operation, and use of utilities and service systems are assessed within other resource categories as part of the overall evaluation of Pure Water; no other potential impacts were identified that were unique to this particular resource category. This subject is further addressed in Chapter 6, *Environmental Effects Found Not to be Significant*.

1.2.2 Public Review of the Draft EIR

When a Draft EIR is submitted to the State Clearinghouse for review by state agencies, the public review period shall not be less than 45 days, unless the State Clearinghouse approves a shorter period (PRC Section 21091). During public review, the Draft EIR is circulated to responsible agencies and trustee agencies with resources affected by a project, state agencies with jurisdiction by law, federal agencies, and interested parties and individuals. The purpose of public and agency review of the Draft EIR includes sharing expertise, disclosing agency analysis, checking for accuracy, detecting omissions, discovering public concerns, and soliciting comments. In reviewing the Draft EIR, reviewers should focus on the sufficiency of the document in identifying and analyzing potentially significant effects on the environment and avoiding or mitigating the significant effects of the project.

1.2.3 Preparation of the Final EIR and Consideration of Pure Water

Following completion of the public review period for the Draft EIR, a Final EIR will be prepared to address all comments received on the Draft EIR (PRC Sections 21083 and 21092.5; CEQA Guidelines Section 15088). Responses to late comments may be prepared but are not required under CEQA (PRC Section 21092.5). Metropolitan's Board, as the decision-making body of the CEQA lead agency, then will consider certifying the Final EIR (PRC Section 21083; CEQA Guidelines Section 15090). Specific findings will include a determination by Metropolitan's Board that the Final EIR has been completed in compliance with CEQA, that the Board has reviewed and considered the information contained in the Final EIR, and that the Final EIR reflects the lead agency's independent judgement and analysis. If the Final EIR is certified, Metropolitan's Board may consider approval of Pure Water. Prior to approval, Metropolitan's Board must make written findings regarding each potential significant environmental effect identified in the Final EIR (CEQA Guidelines Section 15091(a)).

CEQA generally prohibits a lead agency from approving or implementing a project unless its significant environmental effects have been avoided or reduced to a less-than-significant level where feasible (PRC Sections 21002 and 21002.1). Where such effects cannot be fully mitigated, the agency may still decide to approve a project, but must provide its rationale for doing so in a Statement of Overriding Considerations (SOC) (PRC Section 21081). An SOC balances the benefits of a project against its unavoidable environmental consequences (CEQA Guidelines Section 15093). The SOC, if used, must be included in the record of the proposed project approval. If Metropolitan's Board approves Pure Water, Metropolitan will file a Notice of Determination with the County Clerk of each county within Metropolitan's service area (Los Angeles, Orange, Ventura, San Bernardino, Riverside, and San Diego) and the State Clearinghouse (CEQA Guidelines Section 15094).

1.3 CONTENT AND FORMAT OF THE EIR

The content and format of this EIR are designed to meet the requirements of CEQA. The EIR includes the following chapters:

- **Executive Summary.** Summarizes Pure Water, environmental impacts that would result from implementation of Pure Water, recommended mitigation measures that would avoid or reduce impacts, and the levels of significance of impacts both before and after mitigation. Also identifies areas of controversy known to the lead agency and issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

- **Chapter 1, Introduction.** Provides an introduction to Pure Water and describes the purpose of the EIR, the environmental review process for Pure Water, and the content and format of this document.

- **Chapter 2, Project Overview and Background.** Provides an overview of Pure Water and relevant background information, including the location and general description of Pure Water's facilities and components, program partners, and development timeline. Also discusses the regulatory framework applicable to the use of recycled water in California, as well as potential future integration of Pure Water with other related regional projects and the possibility of delivering purified water from Pure Water directly into the drinking water system in the future.

- **Chapter 3, Project Need, Benefits, and Objectives.** Discusses the need for and benefits of Pure Water in light of increasing constraints and challenges Metropolitan is facing with respect to imported and local water supplies, and sets forth the specific objectives that have been established for Pure Water.

- **Chapter 4, Project Phasing and Detailed Description.** Provides a detailed description of Pure Water's facilities and components and the associated construction and operational activities, as well as a general discussion of the economic and fiscal aspects of the program. Also lists those agencies that are expected to use this EIR in making discretionary decisions related to Pure Water and those permits and approvals that are likely to be needed to fully implement this program.

- **Chapter 5, Environmental Impact Analysis.** Contains program-level and project-level analyses for various environmental resource categories. For each category, this analysis discusses the environmental setting/existing conditions, regulatory framework, significance thresholds, environmental commitments, and potential impacts associated with Pure Water. If applicable, mitigation measures and the level of significance of impact after mitigation are also discussed.

- **Chapter 6, Environmental Effects Found Not to be Significant.** Discusses those environmental resource categories for which no significant impacts are anticipated.

- **Chapter 7, Cumulative Impact Analysis.** Analyzes cumulative impacts for each environmental resource category covered in Chapter 5.

- **Chapter 8, Other CEQA Considerations.** Discusses other topics as required by CEQA to the extent they are not addressed in other sections of the EIR, including growth-inducing impacts,

unavoidable adverse effects, and irreversible environmental changes that would result from implementation of Pure Water.

- **Chapter 9, Project Alternatives.** Describes the alternatives screening process, a reasonable range of alternatives to Pure Water that could avoid or substantially lessen significant effects, and the environmental effects of alternatives in comparison to the proposed program.

- **Chapter 10, List of Preparers.** Provides a list of the EIR preparers.

Supporting materials and technical appendices include the following:

- **Appendix A** Notice of Preparation and Comments
- **Appendix B** Air Quality, Greenhouse Gas Emissions, and Energy Technical Report
- **Appendix C** Biological Resources Technical Report
- **Appendix D** Cultural Resources Survey and Impacts Assessment
- **Appendix E1** Geotechnical Assessment of the Joint Plant Site
- **Appendix E2** Preliminary Geotechnical/Geologic Evaluation
- **Appendix E3** Addendum No. 1 to the Preliminary Geotechnical/Geologic Evaluation
- **Appendix E4** Paleontological Resources Assessment
- **Appendix F1** Hazardous Materials Assessment
- **Appendix F2** PFAS Technical Memorandum
- **Appendix G1** Technical Memorandum: Groundwater Quality
- **Appendix G2** Technical Memorandum: Groundwater
- **Appendix G3** Reverse Osmosis Concentrate Ocean Discharge Compliance Assessment
- **Appendix G4** Hydrology and Water Quality Study
- **Appendix H** Land Use Policy Consistency Analysis
- **Appendix I** Noise Technical Report
- **Appendix J** Traffic Analysis Report
- **Appendix K** Tribal Cultural Resources Consultation Documentation
- **Appendix L** Alternatives Screening

At the end of each chapter in the EIR is a list of references to the principal analyses, studies, reports, supporting materials, technical appendices, and other documents that were considered or used in preparing that particular chapter. However, for Chapter 5, *Environmental Impact Analysis*, these references are found at the end of each section.

The Final EIR for Pure Water will be comprised of the following: the Draft EIR, supporting materials, and technical appendices; the comments received on the Draft EIR; Metropolitan's responses to such comments, including any specific changes or clarifications made to the Draft EIR; and the Mitigation Monitoring and Reporting Program (MMRP) for Pure Water.

2.0 PROJECT OVERVIEW AND BACKGROUND

This chapter provides an overview of Pure Water and other background information relevant to the discussion and analysis that follow in subsequent chapters, including the anticipated location and boundaries of Pure Water's various facilities and components as required under CEQA Guidelines Section 15124(a).

2.1 PURE WATER LOCATION AND GENERAL DESCRIPTION

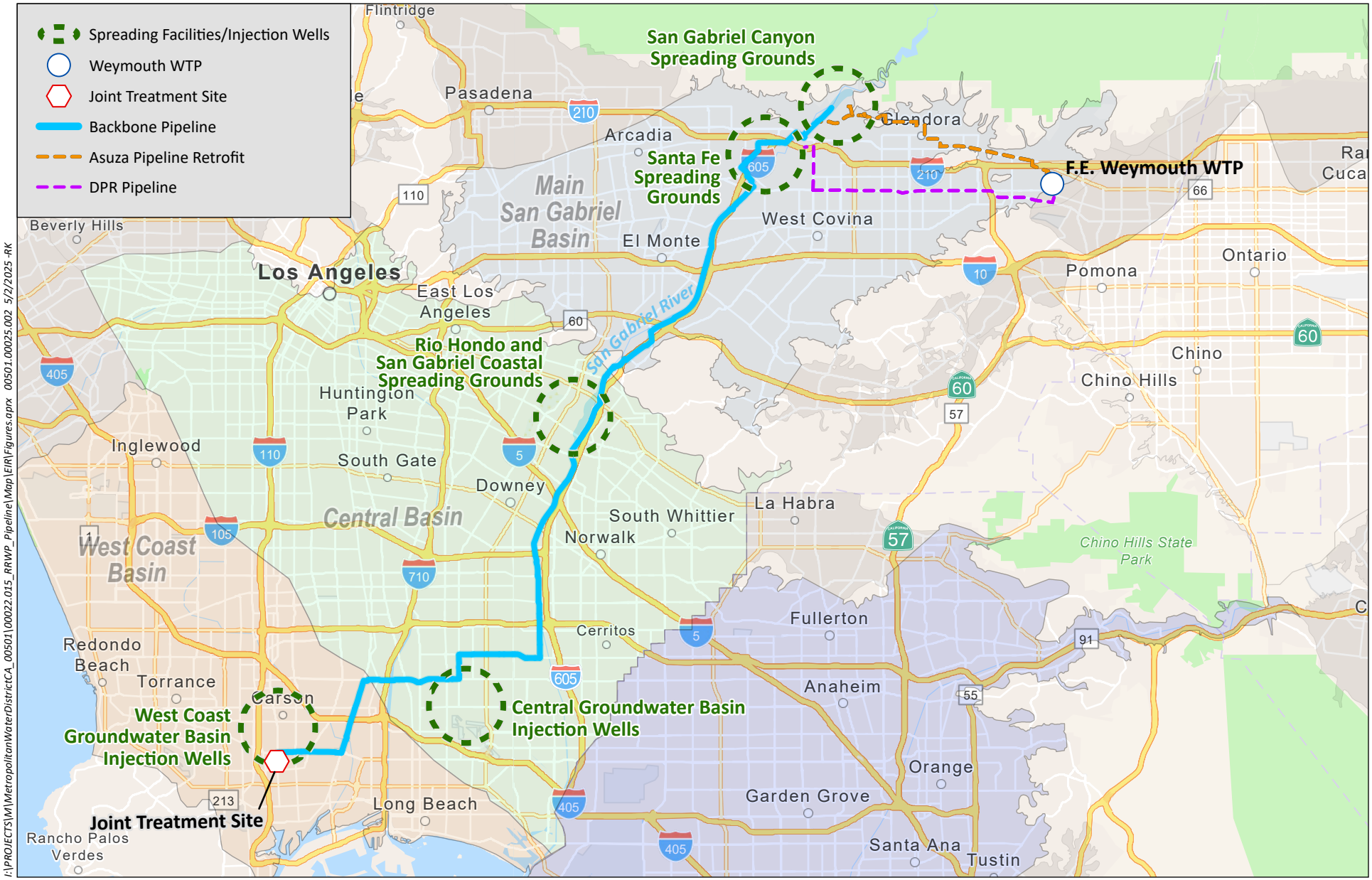
The proposed Pure Water facilities and components would be located within Los Angeles County (County) and would extend from the City of Carson to as far north as the City of Azusa and as far east as the City of La Verne. This area, referred to as the Pure Water area, is shown on **Figure 2-1** along with the locations of Pure Water's major facilities and components.

Pure Water would create and distribute a new sustainable local water supply by harvesting one of the region's largest untapped sources of cleaned wastewater[1] to produce purified water. This new water supply would help reduce the region's dependence on imported water and would assist the region in addressing potential disruptions to imported water supplies. Pure Water not only would provide a more diversified water supply to Southern California, it also would enhance Metropolitan's operational resilience, reliability, and flexibility in the face of ongoing challenges such as long-term drought and climate change.

Sanitation Districts A. K. Warren Water Resource Facility

Pure Water would involve purification of cleaned wastewater obtained from the Sanitation Districts' existing Warren Facility to a new AWP Facility. This new AWP Facility would use a state-of-the-art purification process to produce up to 150 MGD, or nearly 155,000 acre-feet per year (AFY)[2], of sustainable, highly purified water. This purified water would be primarily used for indirect potable reuse (IPR) and direct potable reuse (DPR)[3] purposes. Specifically, it would be used to recharge the West Coast, Central, and Main San Gabriel groundwater basins through spreading facilities and injection wells and to augment water supplies at existing WTPs

[1] "Cleaned wastewater" is a general term referring to wastewater that has been treated at a wastewater treatment plant to remove solids and organic matter and may be used interchangeably with treated wastewater.
[2] One MGD is roughly equivalent to 1,121 AFY. The estimate of 155,000 AFY assumes that the AWP Facility would operate at full capacity 92 percent of the time.
[3] IPR involves the use of recycled water to replenish drinking water supplies indirectly, where a suitable environmental barrier is in place prior to potable reuse. DPR involves the use of highly treated recycled water to replenish drinking water supplies directly, where no environmental barrier is in place prior to potable reuse. IPR and DPR are discussed further in Section 2.4.



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Source: Base Map Layer (Esri)

PURE WATER SOUTHERN CALIFORNIA

Pure Water Area

Figure 2-1

owned and operated by Metropolitan within its service area. A portion of this purified water also may be used for non-potable reuse purposes, including landscape irrigation and industrial process applications. The purified water would be pumped from a new pump station as part of the AWP Facility to a new backbone conveyance system as described below.

To support this new AWP Facility, certain improvements to the Warren Facility would be needed. These include adding a sidestream centrate treatment system and associated ancillary facilities to reduce the amount of nitrogen in the cleaned wastewater going to the AWP Facility. In addition, a new Workforce Training Center would be developed to provide comprehensive hands-on training for a variety of trades and certification needs related to the water and wastewater industries.

Collectively, the AWP Facility, Warren Facility improvements, and Workforce Training Center would be constructed at a location referred to as the Joint Treatment Site. The Joint Treatment Site encompasses a portion of the Warren Facility and some adjacent property owned by the Sanitation Districts. The Joint Treatment Site is shown in **Figure 2-2**.

Distribution of purified water produced at the AWP Facility would require construction of a new backbone conveyance system consisting of approximately 39 miles of pipeline (backbone pipeline), two pump stations, and multiple service connections. The backbone pipeline would be divided into eight segments or reaches extending from the AWP Facility in the City of Carson to the San Gabriel Canyon Spreading Grounds in the City of Azusa (**Figure 2-3**). Purified water would be distributed along the backbone pipeline to replenish groundwater basins via new recharge facilities, including spreading facilities and injection wells.

Facilities for DPR would include additional treatment facilities, pipeline connections from the backbone pipeline to Metropolitan's Weymouth WTP, and associated pump stations. Facilities for non-potable uses would include service connections along the backbone pipeline and small-diameter pipelines for distribution.

Metropolitan F. E. Weymouth Water Treatment Plant

Several existing Sanitation Districts support facilities within the footprint of the future AWP Facility would be demolished and rebuilt elsewhere within the Warren Facility. These support facilities include a warehouse with outdoor storage space; an outdoor grit, screenings, and sewer cleanings handling area (pit); and a Secondary Treatment Area Research Facility. All the new Sanitation Districts support facilities would be located in vacant or underutilized areas in the northeastern portion of the Warren Facility.

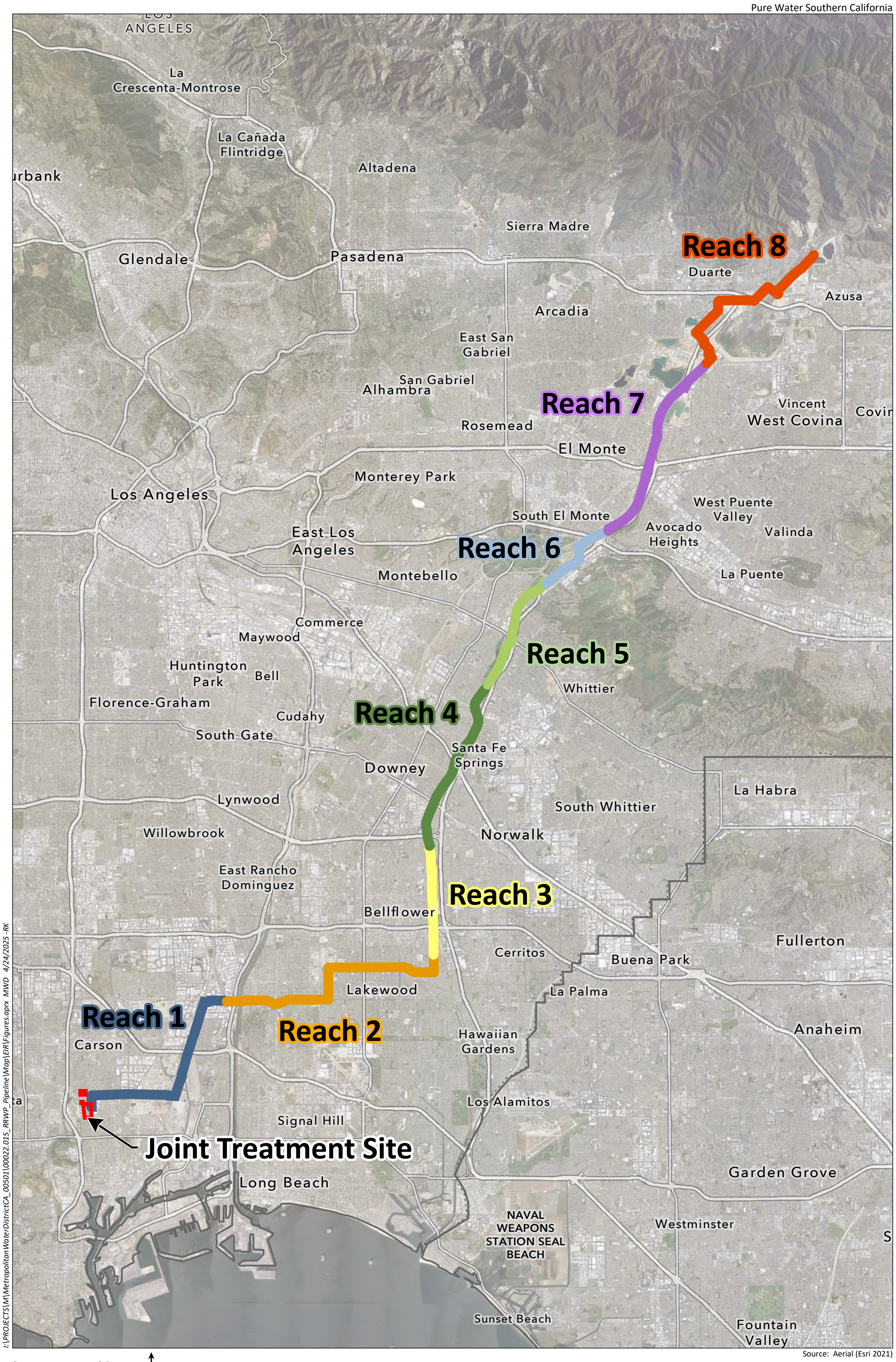
Source: Base Map Layer (Esri)

0 850 Feet

PUREWATER SOUTHERN CALIFORNIA

Joint Treatment Site

Figure 2-2



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Source: Aerial (Esri 2021)

PURE WATER SOUTHERN CALIFORNIA

Backbone Pipeline Reaches

Figure 2-3

In summary, the proposed key facilities and components of Pure Water include:

- A new Joint Treatment Site, consisting of a new AWP Facility, associated improvements to the Warren Facility, and a new Workforce Training Center;
- A new backbone conveyance system, consisting of a backbone pipeline, pump stations, and multiple service connections;
- New groundwater recharge facilities, including spreading facilities and injection wells;
- New DPR facilities, including associated treatment facilities, pipelines, and pump stations; and
- New non-potable water facilities, including smaller pipelines and service connections.
- New Sanitation Districts support facilities, including a warehouse; a grit, screenings, and new sewer cleanings handling station, and a research facility.

The facilities and components comprising Pure Water are discussed in detail in Chapter 4, *Project Phasing and Detailed Description*.

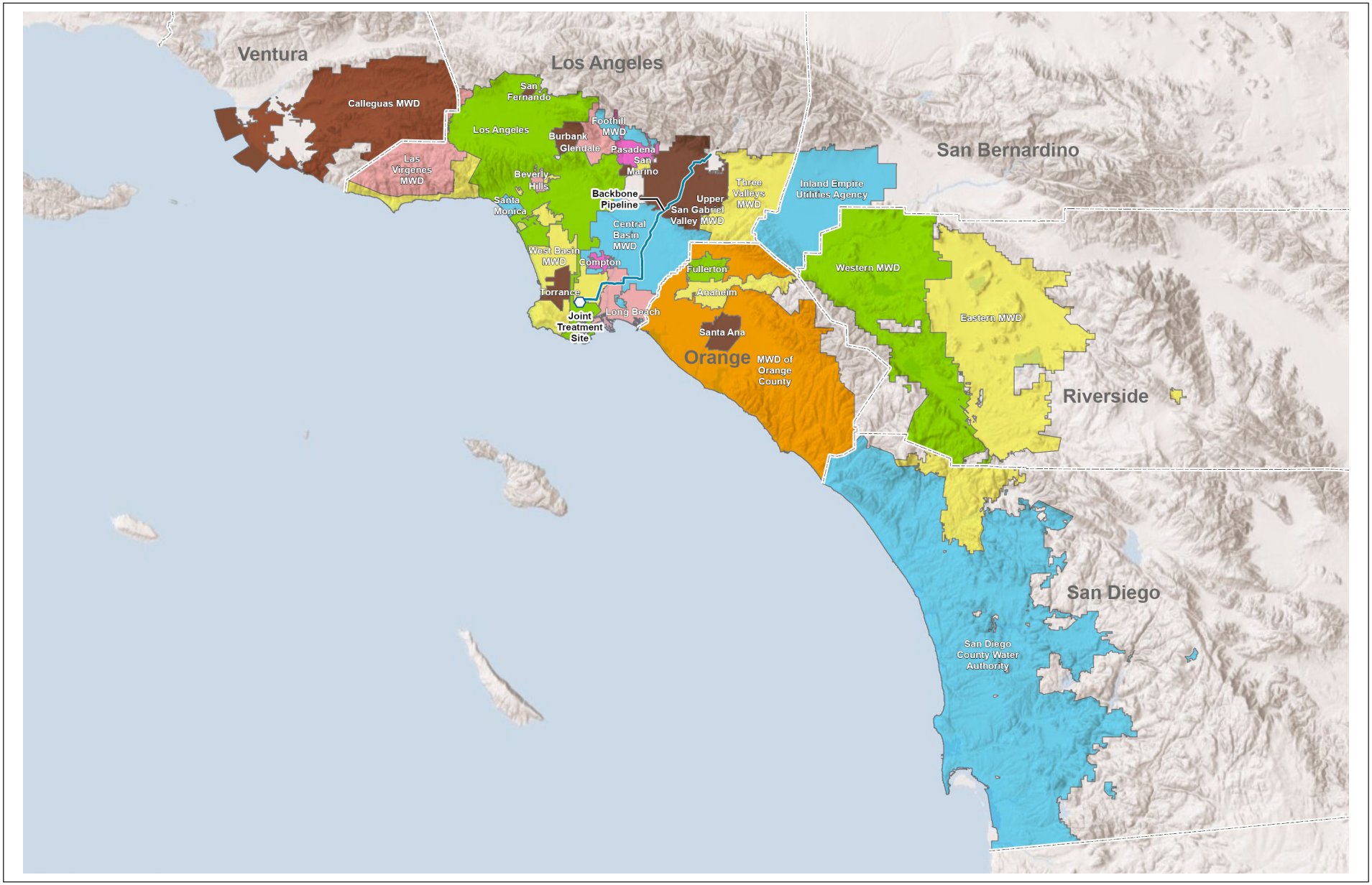
2.2 PURE WATER PARTNERS

2.2.1 The Metropolitan Water District of Southern California

Metropolitan is a public agency incorporated in 1928 pursuant to the Metropolitan Water District Act (Statutes 1969, ch.209, as amended; Deering's California Water Code [CWC] – Uncodified Act 570) to build the Colorado River Aqueduct (CRA), a facility it still owns and operates. Metropolitan's primary purpose is to provide a supplemental water supply for domestic and municipal uses to its 26 member agencies, which includes 14 cities, 11 municipal water districts (MWDs), and 1 county water authority. Metropolitan is governed by a 38-member Board composed of representatives from the member agencies.

Metropolitan's service area encompasses 5,200 square miles of the Southern California region. It extends about 200 miles along the Pacific Ocean from the City of Oxnard on the north to the international boundary with Mexico on the south, and it reaches as far as 70 miles inland from the coast (**Figure 2-4**). It includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura. Approximately 86 percent of the people living in those counties reside within Metropolitan's service area boundaries. Metropolitan estimates that approximately 19 million people, almost half of the state's population, were living in its service area as of 2020, based on official estimates from the California Department of Finance. Between 2011 and 2020, Metropolitan provided between 40 and 50 percent of the municipal, industrial, and agricultural water used in its service area.

Metropolitan imports water from two sources: the Colorado River via the CRA and the Sacramento-San Joaquin River Delta (Bay-Delta) via the State Water Project (SWP) through the California Aqueduct. The total amount of water and proportion available from each of these sources varies from year to year. The remaining water supply in the service area comes from local wells, surface water in local reservoirs, recycling, and the City of Los Angeles' aqueducts from the Owens Valley/Mono Basin east of the Sierra



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Source: THE METROPOLITAN WATER DISTRICT

PURE WATER SOUTHERN CALIFORNIA

Metropolitan Service Area

Figure 2-4

Nevada. In addition to importing water, Metropolitan supports its member agencies in developing local water conservation, recycling, storage, and resource management programs.

The Colorado River was Metropolitan's original source of water upon Metropolitan's establishment in 1928. Metropolitan has certain rights to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. The CRA transports water from Lake Havasu, at the border of the state of California with Arizona, approximately 242 miles to its terminus at Lake Mathews in Riverside County (**Figure 2-5**). In addition to the CRA, Metropolitan's existing facilities include a distribution system with 9 reservoirs, 5 water treatment plants, 16 hydroelectric plants, approximately 830 miles of large-diameter pipelines, and 400 connections to member agencies.

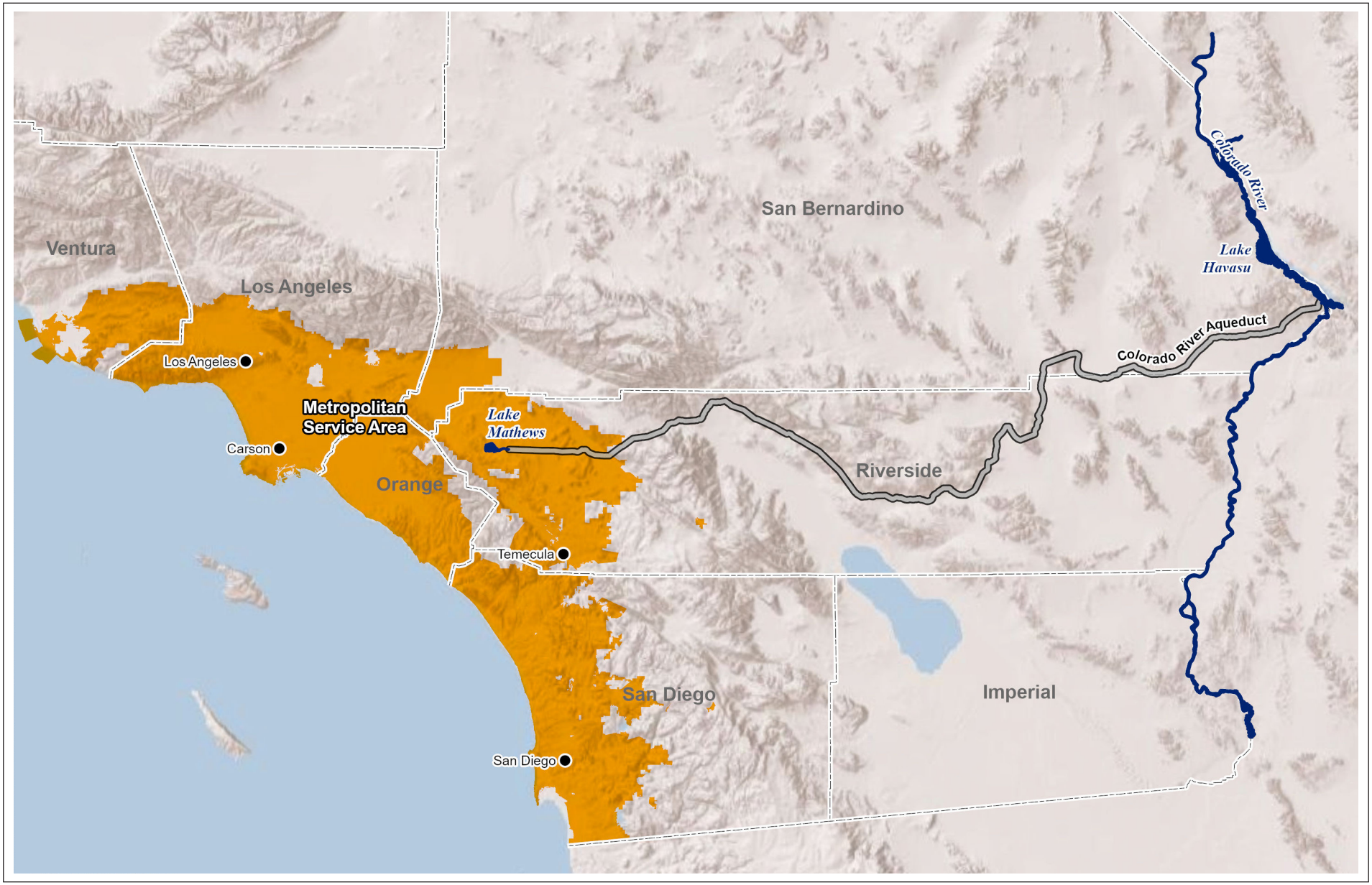
Metropolitan also has certain contract rights with respect to the SWP. The SWP is owned by the state of California and is operated and maintained by its Department of Water Resources (DWR). The SWP transports Feather River water stored in and released from Lake Oroville and conveyed through the Bay-Delta, as well as unregulated flows diverted directly from the Bay-Delta, south via the California Aqueduct to four delivery points (**Figure 2-6**). Under its contract, Metropolitan receives various supplies via the SWP, including water that is allocated by DWR on an annual basis. This allocation can vary dramatically from year to year and is dependent on many factors, such as precipitation, snowpack, available storage, water quality, and environmental regulations and constraints. Metropolitan also has the contractual right to use the SWP conveyance system to convey both SWP and non-SWP supplies, subject to any applicable capacity limitations or operational restrictions (Metropolitan 2021).

Metropolitan would construct, own, and operate most of the treatment and conveyance facilities associated with Pure Water and, as such, is serving as the lead agency for purposes of this environmental review (CEQA Guidelines Sections 15050-51, 15367).

2.2.2 Los Angeles County Sanitation Districts

The Sanitation Districts consist of 24 independent special districts that form a regional public agency that collects and treats wastewater for over 5.5 million people in the County. Their service area covers about 850 square miles and encompasses 78 cities and unincorporated territories within the County (**Figure 2-7**). The 24 districts work cooperatively under a Joint Administration Agreement.

The Sanitation Districts construct, operate, and maintain facilities to convey and treat domestic and industrial wastewater, manage discharge of cleaned wastewater, and generate recycled water, electrical power, and biosolids as products of the treatment processes. The Sanitation Districts' wastewater system includes approximately 1,400 miles of sewers, 49 pumping plants, and 11 wastewater treatment plants. This system conveys and treats approximately half of the wastewater produced in the County. Ten of these wastewater treatment plants provide water reclamation (and are thus referred to as wastewater reclamation plants) that produce recycled water available for reuse, while one wastewater treatment plant, the Warren Facility, does not currently provide water reclamation (except for onsite reuse). The water reclamation plants capture and treat low-salinity wastewater to produce high-quality recycled water that is safe for human contact and can be used for a variety of uses, including landscape irrigation, dust control, and groundwater replenishment. The Sanitation Districts also provide solid waste management services for approximately 20 percent of the County's disposal needs through the operation of two sanitary solid waste landfills, two materials recovery/transfer facilities, and two facilities that convert landfill gas into renewable energy.



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Source: THE METROPOLITAN WATER DISTRICT

PUREWATER SOUTHERN CALIFORNIA

Colorado River Aqueduct

Figure 2-5

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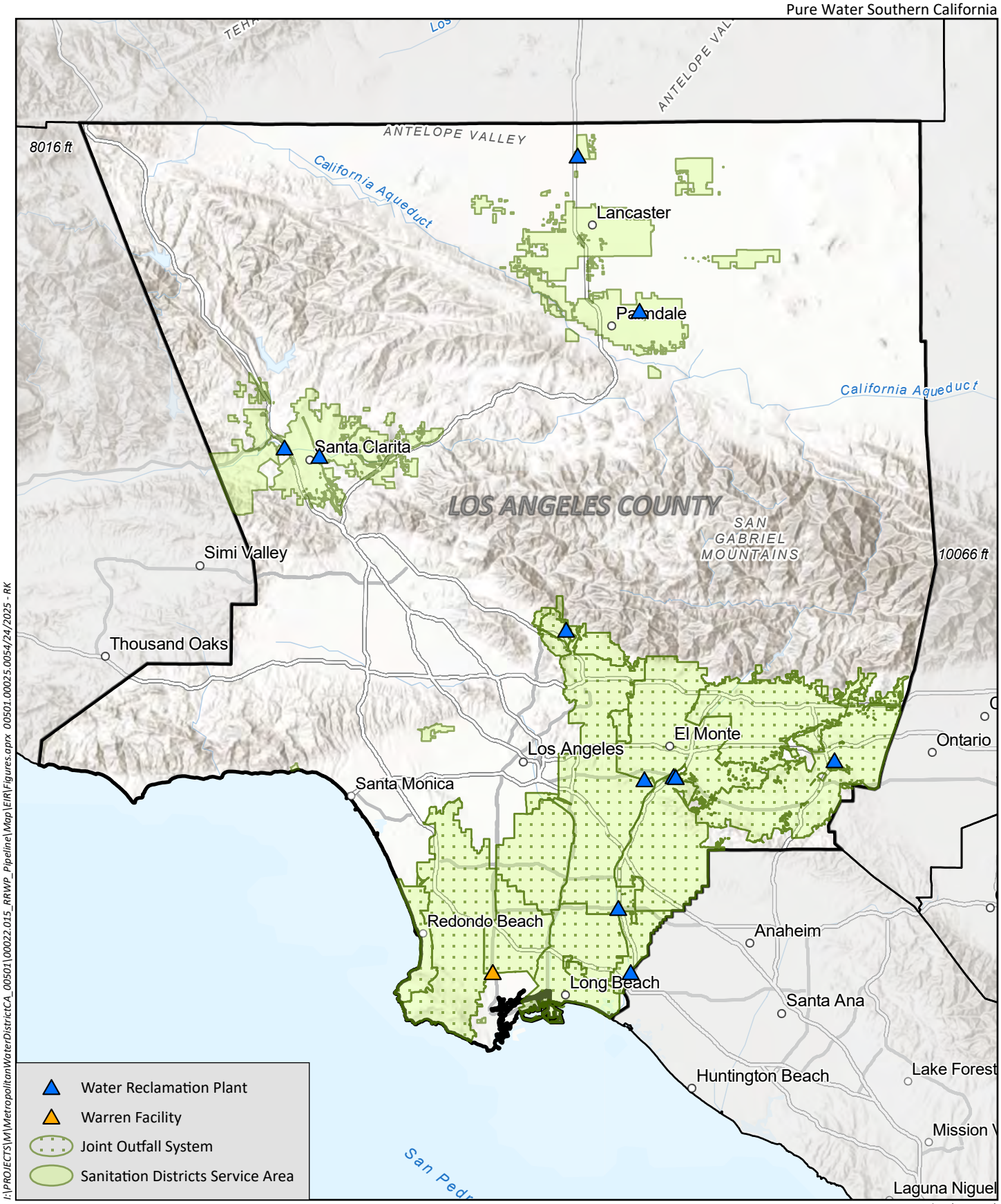
Source: THE METROPOLITAN WATER DISTRICT

PURE WATER SOUTHERN CALIFORNIA

State Water Project

Figure 2-6



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Source: Site Plan (Stantec)

PUREWATER SOUTHERN CALIFORNIA

Sanitation Districts Service Area

Figure 2-7

Seventeen of the 24 independent special districts that make up the Sanitation Districts are served by a regional, interconnected system of facilities known as the Joint Outfall System (JOS), which extends from the City of La Cañada-Flintridge south to the City of Long Beach and from the City of Los Angeles east to Orange and San Bernadino counties (**Figure 2-7**). The JOS serves approximately 5 million people in 73 cities and unincorporated territories, including small areas within the City of Los Angeles, Orange County, and San Bernardino County. The JOS includes seven wastewater treatment plants, the largest one being the Warren Facility and the other six are smaller scale water reclamation plants. The Warren Facility treats higher-salinity wastewater along with the solids removed at the six water reclamation plants that are part of the JOS. The Warren Facility is one of the largest wastewater treatment plants in the world and treats an average of approximately 250 MGD of wastewater. This cleaned wastewater is currently discharged to the Pacific Ocean and is one of the last significant potential sources of untapped cleaned wastewater in Metropolitan's service area that could be purified for potable reuse (Sanitation Districts 2025).

The Sanitation Districts would construct, own, and operate a portion of the upstream treatment facilities associated with Pure Water and, as such, is serving as a responsible agency for purposes of this environmental review (CEQA Guidelines Sections 15096, 15381).

2.2.3 Nevada and Arizona

As will be discussed in Chapter 3, *Project Need, Benefits, and Objectives*, one of the objectives of Pure Water is to reduce Metropolitan's reliance on imported water supplies, which are facing increasing constraints due to a variety of factors. To that end, Metropolitan has been exploring potential partnerships with Southern Nevada Water Authority (SNWA), the Arizona Department of Water Resources (ADWR), and Central Arizona Water Conservation District (CAWCD) pursuant to which they would provide financial support and assistance for Pure Water in return for Metropolitan agreeing to take less water from the Colorado River under certain hydrologic conditions.

Pure Water is not dependent on the consummation of any such partnerships, nor are such partnerships a reasonably foreseeable outcome of any approval of Pure Water. Instead, discussions concerning such potential partnerships are still in their early stages and predicting what may result from those discussions is entirely speculative. Additionally, any final agreement between Metropolitan and these parties would be contingent upon the outcome of the United States Bureau of Reclamation's (USBR) Post-2026 Operational Guidelines that USBR will use to operate Lake Powell and Lake Mead and the related negotiations currently underway among the seven Basin States[4] (USBR 2025), which likewise cannot be predicted. Because of these uncertainties, the environmental impacts (if any) of any future partnerships (if any) are not reasonably foreseeable, and no meaningful analysis can be provided at this time.

However, to the extent a partnership with SNWA, ADWR, or CAWCD is pursued, it would not alter the basic nature, scope, and need for Pure Water, nor would it change any of Pure Water's physical or operational characteristics. Thus, the future possibility of a potential partnership does not affect the analysis of environmental impacts, mitigation measures, or alternatives presented in this EIR. While such a partnership could result in Metropolitan transferring or exchanging some its Colorado River supplies to other parties under certain circumstances, the Colorado River water involved in any such transfer or

[4] These states are Arizona, California and Nevada (Lower Basin) and Colorado, New Mexico, Utah and Wyoming (Upper Basin).

exchange would be located outside of California and would not require construction or operation of any facilities or components for Pure Water in addition to or different from those described in Chapter 4. Moreover, it is anticipated that any potential effects associated with these types of transfers and exchanges would be analyzed by USBR as part of its development of new agreements for Post-2026 Operations, in accordance with the requirements of the National Environmental Policy Act (CEQA Guidelines Section 15277).

2.3 PURE WATER DEVELOPMENT TIMELINE

Between 2010 and 2012, Metropolitan and the Sanitation Districts jointly conducted pilot-scale studies at the Warren Facility to test emergent technologies and to evaluate the feasibility of advanced purification of the Warren Facility's cleaned wastewater for IPR purposes. These pilot-scale studies determined that advanced purification of the Warren Facility's cleaned wastewater for IPR through groundwater recharge was feasible (Sanitation Districts/Metropolitan 2012).

Metropolitan Grace F. Napolitano Innovation Center

In 2016, Metropolitan completed a more detailed feasibility study of the overall Pure Water program and its key components, including the advanced water purification process, conveyance system, and recharge facilities. This study concluded that Pure Water as proposed is technically feasible (Metropolitan 2016). Subsequently, a 0.5-MGD demonstration-scale purification facility (now known as the Grace F. Napolitano Pure Water Southern California Innovation Center [NIC]) was constructed at the Warren Facility and began operation in October 2019 with the purpose of testing and optimizing an advanced water purification process and to prove the technology's viability as needed for regulatory approval. Testing has also included a compliance assessment of the planned ocean disposal of reverse osmosis (RO) concentrate from Pure Water's AWP Facility via the Warren Facility outfall, which has shown that the proposed ocean discharge of RO concentrate would meet current regulatory requirements and is not expected to generate concerns for water quality (Sanitation Districts 2022).

In 2019, Metropolitan completed conceptual planning studies that built upon the initial analyses presented in the 2016 feasibility study. It examined various aspects of Pure Water, including program phasing, conveyance system refinements, water quality purification options, groundwater recharge modeling for IPR, and potential DPR opportunities (Metropolitan 2019a). In 2020, Metropolitan further evaluated and refined the conveyance system and recommended that two feasible alignment alternatives be carried forward for consideration (Metropolitan 2020a). Metropolitan also prepared two white papers during this time. The first focused on program implementation strategies and DPR opportunities (Metropolitan 2019b). The second detailed Pure Water's role in Metropolitan's regional resource planning and provided information on financial and other considerations related to the program (Metropolitan 2020b).

In 2021, the Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC) completed a study commissioned by Metropolitan that analyzed the projected economic and fiscal impact of both construction expenditures and ongoing activity associated with Pure Water. That study found that these activities would provide a significant positive economic impact in the Los Angeles Basin and throughout entire Southern California region (LAEDC 2021). LAEDC reviewed and updated this study in April 2025 and reached the same conclusions as before (LAEDC 2025).

In 2023, Metropolitan prepared an addendum to the second white paper to address certain changed conditions and updated information pertinent to the financial aspects of Pure Water (Metropolitan 2023). That same year, Raftelis prepared a report for Metropolitan that identified and assessed potential alternatives for the allocation and recovery of Pure Water costs and summarized several recommended alternative cost recovery mechanisms for consideration (Raftelis 2023).

Lastly, in 2024, Metropolitan prepared a third white paper focusing on DPR. This white paper discussed how DPR is considered as part of Pure Water, the implications of recently adopted DPR regulatory requirements, the considerations and research needs for implementing DPR, the benefits and challenges associated with different forms of DPR, and the recommended next steps for Metropolitan (Metropolitan 2024).

Many other formal and informal studies, analyses, and assessments of various facilities, components, and processes have been conducted in the course of developing Pure Water. These extensive planning efforts have resulted in the program as currently proposed, which is discussed in detail in Chapters 3 through 5.

2.4 RECYCLED WATER IN CALIFORNIA

Pure Water is being developed within a regulatory environment that is rapidly evolving with respect to the use of recycled water in California. This section provides a brief overview of this regulatory framework, as well as the current statewide goals for recycled water. In addition, this section describes some other recycled water projects that have been and are being successfully implemented in California.

2.4.1 Regulatory Framework

In California, recycled water is defined as "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource" (CWC Section 13050(n)). Recycled water is a general term and primarily consists of municipal wastewater that has been treated and/or purified in a wastewater treatment facility and complies with recycled water regulations and standards for specified beneficial uses. The level of wastewater treatment depends on how the recycled water will be used, with the uses generally categorized as either non-potable reuse (i.e., in applications not involving human consumption) or potable reuse (i.e., as drinking water or in applications involving human consumption) (SWRCB 2025).

This first state laws related to water recycling were adopted in 1969 as part of the Porter-Cologne Water Quality Control Act (CWC Section 13000 *et seq*.). Since that time, these laws (CWC Sections 13500-13609) and their implementing regulations (CCR Div. 14, Chs. 3 & 17) have changed dramatically. Initially these laws and regulations only addressed non-potable reuse. However, over time they have been broadened to allow for various potable reuses, including IPR and DPR, subject to strict conditions.

IPR for groundwater recharge is the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of water supply for a public water system (CWC Section 13561(c)). General groundwater replenishment requirements for IPR were established in 1978 and pertained to surface application, or spreading, of recycled water. Additional requirements for surface application and new requirements for subsurface application (direct injection via wells) were added in 2014 (Olivieri et al. 2020).

DPR is the latest development in the use of recycled water in California. DPR can occur by introducing recycled water as a water source for a drinking water treatment plant, where it would undergo further treatment. This is known as raw water augmentation (RWA) (CWC Section 13561(b)(1)). Alternatively, it can be provided directly into a public water system after undergoing additional purification steps, which is known as treated water augmentation (TWA) (Section 13561(b)(2)).

In August 2021, State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) issued draft criteria for DPR, which were reviewed by a panel of experts convened by the National Water Research Institute (NWRI). NWRI issued preliminary findings and recommendations in June 2022 (NWRI 2022) and final findings and recommendations in October 2023 (NWRI 2023). The expert panel concluded that the draft DPR regulations adequately protected public health (NWRI 2023). Based on these findings, the SWCRB unanimously approved regulations for DPR, which took effect on October 1, 2024 (SWRCB 2024a; SWRCB 2024b). The approval gave California the most advanced standards in the nation for treating wastewater to such an extent that the final treated water meets or exceeds current drinking water standards. DPR includes extensive requirements, specifically pathogen control and chemical control, which are more stringent than IPR regulations to account for the absence of an environmental buffer (e.g., groundwater aquifer or reservoir) that is integral to IPR.

A more detailed discussion of the various laws, rules, and regulations applicable to recycled water use in California can be found in Section 5.8, *Hydrology and Water Quality*.

2.4.2 Statewide Recycled Water Goals

Recognizing the importance of recycled water as a critical water supply for California, the SWRCB adopted the Policy for Water Quality Control for Recycled Water (Recycled Water Policy) in 2009 and most recently amended it in 2018 (SWRCB 2018; SWRCB 2025). The purpose of the Recycled Water Policy is "to encourage the safe use of recycled water from wastewater sources that meet the definition in CWC Section 13050(n), in a manner that implements state and federal water quality laws and protects public health and the environment."

To support water supply diversity and sustainability and to encourage the increased use of recycled water in California, the SWRCB adopted the following goals as part of the 2018 amendment to the Recycled Water Policy:

1. Increase the use of recycled water from 714,000 AFY in 2015, to 1.5 million AFY by 2020, and to 2.5 million AFY by 2030.

2. Reuse all dry weather direct discharges of treated wastewater to enclosed bays, estuaries and coastal lagoons, and ocean waters that can be viably put to a beneficial use. For the purpose of this goal, treated wastewater does not include discharges necessary to maintain beneficial uses and brine discharges from recycled water facilities or desalination facilities.

3. Maximize the use of recycled water in areas where groundwater supplies are in a state of overdraft, to the extent that downstream water rights, instream flow requirements, and public trust sources are protected.

Recycled water production in 2020 fell short of the first goal listed above (1.5 million AFY), as the actual reported recycled water production in that year was 728,000 AF based on information provided by 94 percent of the permitted facilities (SWRCB 2021). Nonetheless, the state has continued to set increased targets for recycled water use. In August 2022, Governor Newsom released a water supply strategy that includes statewide goals for recycling a total of at least 800,000 AFY by 2030 and 1.8 million AFY by 2040 (CFA et al. 2022), with most of that additional recycling to be done with direct wastewater discharges that are now going to the ocean, such as those from the Warren Facility. Pure Water would help to further these goals.

2.4.3 Regional Recycled Water Use

For more than a century, recycled water has been used intentionally as a non-potable water supply source in California, primarily for agricultural and landscape irrigation. Early recycled water projects generally were implemented when water reuse was the most economical method of wastewater management, which was especially prevalent in inland areas where ocean discharge was not an available option. In the 1960s, population growth in California began to strain available freshwater sources, resulting in the use of recycled water to replenish groundwater basins. With the development of advanced water treatment technologies over the last 30 years, a dramatic increase has occurred in both non-potable and potable types of recycled water applications available and quantities of water being reused.

As of 2023, there were a total of 723 wastewater treatment or recycled water facilities in California, which treated about 2.5 million AF of wastewater that year. Of these facilities, 278 produced recycled water. Recycled water use in California totaled 717,000 AF during that same period (SWRCB 2024c). In the Metropolitan service area, about 463,000 AF of recycled water was used in 2023. In fiscal year 2023/24, Metropolitan provided incentives for 40,000 AF of recycled water use through the Local Resources Program (Metropolitan 2025). Described below are a few examples of other recycled water projects that are similar in nature to Pure Water.[5]

Orange County Water District's Groundwater Replenishment System, often referred to as GWRS, located in Fountain Valley, is the largest potable reuse project of its type in the world. Currently producing 130 MGD, GWRS began in January 2008 as a 70-MGD plant to recharge the Orange County Groundwater Basin. In May 2015, the GWRS was expanded to 100 MGD. In December 2022, the GWRS was expanded to 130 MGD, or approximately 134,000 AFY based upon a 90 percent online factor. The primary purpose of the GWRS is for IPR via groundwater replenishment. In addition to an advanced water purification facility, the GWRS includes a 13-mile pipeline that extends from Fullerton to recharge facilities in north Anaheim (Orange County Water District 2025).

The **Chino Basin Program** is a proposed potable reuse project initiated by the Inland Empire Utilities Agency. The program would include a new advanced water treatment facility that would produce approximately 15,000 AFY of purified water for IPR purposes to recharge the Chino Groundwater Basin

[5] These examples include projects within Metropolitan's service area with a treatment capacity greater than 100 MGD (or greater than 100,000 AF) of purified water; with multiple components or uses such as IPR, DPR, and non-potable uses; or that involve integration into Metropolitan's existing distribution system.

and new wellhead treatment facilities to be installed on existing extraction wells. The Chino Basin Program also would allow for integration with Metropolitan's existing Rialto Feeder for exchange/water transfers to increase flows in Northern California when needed. Water introduced into the Rialto Feeder would be used by Metropolitan to meet demands instead of SWP water from Northern California, thereby making water available for environmental needs in the Bay-Delta. To achieve this, the wells and wellhead treatment facilities would be used to transfer up to 50,000 AFY of groundwater from the Chino Groundwater Basin into Metropolitan's Rialto Feeder to replace imported water from the SWP (Inland Empire Utilities Agency 2025).

Pure Water San Diego is a potable reuse project in development by the City of San Diego. The City of San Diego is currently constructing an advanced water treatment facility to produce 30 MGD of purified water for DPR use. This is the first phase in its multi-year program which will ultimately provide one-third of the City of San Diego's water supply. This purified water will be pumped to the Miramar Reservoir in the northern part of the city, blended with imported water and locally sourced water via surface water augmentation, and treated again at the Miramar Water Treatment Plant before distribution. Phase 1 of this program will begin producing purified water in 2026, with a production of approximately 7.5 MGD and then ramping up to 30 MGD as associated infrastructure comes online. In Phase 2, the City of San Diego will expand the initial 30 MGD project to 83 MGD, which is expected to be completed by 2035 (City of San Diego 2025).

The **Purified Water Replenishment Program** is a proposed potable reuse project by Eastern Municipal Water District (EMWD). EMWD currently produces approximately 49 MGD of recycled water from four recycled water treatment plants, primarily for non-potable uses such irrigation and agriculture. The Purified Water Replenishment Program would include blending purified water from a new advanced water treatment facility with recycled water from the four existing recycled water treatment plants for IPR purposes to recharge the San Jacinto groundwater management zone of the Hemet-San Jacinto Groundwater Basin. It is anticipated that about 2,000 AFY of purified water would be produced and blended with 2,000 AFY of recycled water and recharged into the San Jacinto groundwater management zone. The long-term yield of this project is anticipated to be a total recharge rate of 15,000 AFY (EMWD 2025).

As proposed, Pure Water would increase recycled water use in California by 155,000 AFY. This corresponds to an increase of about 33 percent of recycled water use within Metropolitan's service area and about 22 percent within the state as a whole. Thus, implementation of Pure Water would represent a significant increase in recycled water use both nationally and within the state and would provide a step forward toward meeting the current recycled water policy objectives and goals established by the SWRCB and the Governor.

2.5 FUTURE INTEGRATION AND DEVELOPMENT

2.5.1 Regional Integration

Other projects are being planned in Southern California that could potentially be integrated with Pure Water in the future, thereby enhancing the operational flexibility and reliability of these facilities and improving recycled water distribution across the region. To accommodate the anticipated increase in regional recycled water use, the northern 14 miles of the backbone pipeline, Pure Water's main conveyance facility, currently is anticipated to have a larger diameter than the remainder. This design

would allow for the possibility of a future integrated system, supporting regional goals for securing high-quality, climate-resilient, local water supplies for Southern California.

Two notable projects—Pure Water Los Angeles and the East-West Conveyance Pipeline—are under consideration for potential integration with Pure Water. However, both projects are in the earlier stages of planning and development, and their timeline for implementation is uncertain. Neither project is essential to the successful construction and operation of Pure Water, which would have independent utility regardless of whether Pure Water Los Angeles or the East-West Conveyance Pipeline are ever pursued. As such, these two projects are discussed below for informational purposes only. To the extent these projects do proceed, they will be subject to their own, separate environmental review processes.

2.5.1.1 Pure Water Los Angeles

Formerly known as Operation NEXT and Hyperion 2035, Pure Water Los Angeles is a water reuse program being developed by the City of Los Angeles. It aims to increase and further diversify the City's local supplies and support the transition to 70 percent local water. Pure Water Los Angeles would modernize the Hyperion Water Reclamation Plant's treatment process to treat potentially up to 272 MGD of wastewater. This treated water would be further purified at a new advanced water purification facility to create potentially up to 230 MGD of advanced treated water for beneficial reuse through IPR and potentially DPR. The scope of Pure Water Los Angeles includes, but is not limited to, construction of advanced water purification facilities, water conveyance pipelines, pumping stations, storage facilities, and flow control stations. It also encompasses upgrading existing water system infrastructure, as well as the development of treatment facilities, injection wells, production wells, and monitoring wells to support groundwater recharge and extraction capacities within the Central and San Fernando groundwater basins. The Pure Water Los Angeles Master Plan was completed in December 2024 and a Programmatic EIR for the project is anticipated to be completed by June 2026 (LADWP 2025).

Pure Water Los Angeles and Pure Water share a common objective: maximizing the beneficial reuse of a valuable water resource that is currently being discharged into the ocean. While each system is independently designed to provide significant regional benefits, the potential future integration of the two systems could further enhance water supply reliability, operational flexibility, and long-term resiliency by expanding delivery capacity to a larger service area.

A potential point of integration between Pure Water Los Angeles and the Pure Water conveyance system could enable the transfer of purified water from both systems to the proposed East-West Conveyance Pipeline, as discussed below. Metropolitan and the City of Los Angeles will continue to assess the feasibility and the potential benefits of integrating the two systems, as applicable. Should future conditions support such an initiative, appropriate environmental review would be undertaken for associated modifications at that time.

2.5.1.2 East-West Conveyance Pipeline

A portion of Metropolitan's service area depends solely on the SWP for imported water supplies. The disparity of impacts from the recent drought was the result of limitations in Metropolitan's current distribution system that restrict the movement of CRA water and supplies stored within Diamond Valley Lake and other storage facilities from reaching the SWP-dependent areas located on the west side of Metropolitan's service area. Metropolitan has committed to ensuring equitable access to Metropolitan's

water supply and storage assets by building infrastructure, increasing local supply availability, expanding partnerships, and advancing water use efficiency. On August 16, 2022, Metropolitan's Board approved a resolution that committed Metropolitan to reconfiguring and expanding its existing infrastructure portfolio to provide sufficient access for SWP-dependent areas to the integrated system of water sources, conveyance and distribution, and storage.

One potential action to improve the flexibility of Metropolitan's system is to provide a pipeline to convey water supplies from the east side to the west side of Metropolitan's service area. This would improve the availability of water supplies for the three west-side SWP-dependent member agencies, which include the Los Angeles Department of Water and Power (LADWP), Calleguas MWD, and Las Virgenes MWD. Potential existing water supplies that could be conveyed by the pipeline include those from the CRA, Diamond Valley Lake, other storage from the east side of Metropolitan's service area, and treated water supplies from the Weymouth and Diemer WTPs, as well as possibly from Pure Water. The potential for the integration of a future East-West Conveyance Pipeline with Pure Water will continue to be explored by Metropolitan. If future conditions appear to warrant integration, appropriate environmental review would be undertaken for associated modifications at that time.

2.5.2 Treated Water Augmentation

In addition to potential future integration of Pure Water with related water infrastructure projects, there is the possibility of developing DPR for delivery directly into the drinking water system as part of a later phase of Pure Water. As discussed above, this is referred to as treated water augmentation, or TWA, and represents one form of DPR. The other is raw water augmentation, or RWA, which is being proposed as a part of Pure Water and therefore is analyzed in this EIR.

TWA would potentially reduce the amount of conveyance infrastructure and pumping energy required for Pure Water, since more local connections could be made directly to the drinking water distribution system, as opposed to constructing facilities with larger capacities to convey purified water either to groundwater recharge facilities or to Metropolitan's WTPs. However, there are significant regulatory and operational challenges associated with TWA that would need to be considered to ensure a safe and reliable water supply. For example, Metropolitan would need to evaluate ways to address response time between detection of water quality issues and corrective action, potential pumping challenges through existing gravity pipelines, real-time monitoring technologies, contingency plans for emergencies, and potable demands in existing feeders near the backbone pipeline.

Metropolitan is developing a comprehensive approach to evaluate the feasibility and viability of TWA, recognizing that it represents an emerging treatment concept with no existing projects currently utilizing TWA in California (Metropolitan 2024). While state regulations address both RWA and TWA implementation pathways, TWA presents additional technical complexities due to direct integration into the drinking water system without the treatment plant barrier that RWA provides. This means TWA requires a more extensive demonstration of reliability and safety measures, which makes RWA more readily achievable in the near term. In addition, depending on the location, nature, and capacity of any proposed TWA facilities, there could be additional costs associated with implementation of TWA for Pure Water.

Metropolitan's evaluation process will include assessing technical, operational, and financial considerations beyond those currently being analyzed for RWA (Metropolitan 2024). The scope and timeline for completing this evaluation will be further defined as initial studies progress. If future

conditions appear to warrant integration of TWA, appropriate environmental review would be undertaken for associated modifications at that time.

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3.0 PROJECT NEEDS, BENEFITS, AND OBJECTIVES

This chapter discusses the needs for and benefits of Pure Water in light of the increasing constraints and challenges Metropolitan is facing with respect to both imported and local water supplies. This chapter then sets forth the specific objectives that have been established for Pure Water as required under CEQA Guidelines Section 15124(b).

3.1 NEEDS FOR PURE WATER

As discussed in Chapter 2, *Project Overview and Background*, Metropolitan imports water from the Colorado River via the CRA and from the Bay-Delta via the SWP for distribution to its member agencies. Metropolitan's member agencies also rely on several local sources for water supply. Despite the diversity of water supplies in Metropolitan's portfolio and its support of water conservation measures, Metropolitan faces several challenges in continuing to provide adequate, reliable, and high-quality supplemental water supplies for Southern California.

3.1.1 Water Supply Reliability and Constraints

3.1.1.1 Colorado River

Approximately 20 to 25 percent of Southern California's water supply currently is conveyed through the Colorado River. The Colorado River originates in the Rocky Mountains and is fed primarily by precipitation that occurs throughout the Colorado River Basin, which extends from southwestern Wyoming to the Gulf of California. The Colorado River Basin historically has experienced large variations in annual hydrologic conditions, specifically related to snowpack and rainfall levels and the resulting runoff. From 2000 to 2004, the Basin experienced five consecutive years of significantly below-average precipitation and runoff. Since then, while precipitation levels have been near normal on average, runoff levels have been less than average, indicating a potential shift in the precipitation-to-runoff relationship where less runoff is generated from a given amount of precipitation (Metropolitan 2021). This has resulted in a 22-year drying trend and, as of February 2025, Lake Mead and Lake Powell, the two primary storage reservoirs along the Colorado River, were both at 35 percent of capacity (USBR 2025a). While variations in annual hydrologic conditions within the Colorado River Basin historically have been buffered through a large volume of storage, the reduced storage at Lake Mead and Lake Powell leaves less of a buffer for future periods of reduced precipitation.

Metropolitan gets its Colorado River water pursuant to a water service contract with the USBR. The USBR delivers water to Lower Basin contractors, including Metropolitan, with releases from Lake Mead (Metropolitan 2021). Currently, operations of Lake Mead and Lake Powell are determined by USBR's 2007 Interim Guidelines. Those guidelines expire on December 31, 2025, and USBR is developing the next set of guidelines in the Post-2026 environmental impact statement (USBR 2025b). While Metropolitan's rights are established in its contract with USBR, how much water will be available for delivery in the future will be affected by those guidelines. Metropolitan is working to secure its Colorado River supply in negotiations to develop a consensus among the seven Colorado River Basin states on operations of the Colorado River system reservoirs. Until that happens and the Post-2026 environmental impact statement process is finalized, there is significant uncertainty about whether there will be years in which Metropolitan's Colorado River supply will be reduced.

An additional potential impediment to Colorado River water supplies is the presence of quagga mussels, an invasive species which was discovered in 2007 in Lake Mead and has rapidly spread downstream to the Lower Colorado River. The presence and spawning of quagga mussels in the Lower Colorado River and in reservoirs located in Southern California pose an immediate threat to water systems. Although the introduction of these species into drinking water supplies does not typically result in violation of drinking water standards, invasive mussel infestations have been known to clog intakes and water conveyance systems, in addition to causing environmental damage (Metropolitan 2021).

3.1.1.2 State Water Project

Approximately 30 percent of water deliveries to Metropolitan's service area is conveyed through the SWP. SWP supplies originate in the Feather River watershed and are conveyed to Southern California via export pumps in the South Delta and the California Aqueduct (Metropolitan 2021). Annual water supplies vary greatly depending on hydrologic conditions. For example, below-average precipitation in 2020 resulted in Metropolitan receiving only 20 percent of its SWP-contracted water supplies. For calendar year 2021, the SWP allocation decreased from an initial allocation of 10 percent to 5 percent based on ongoing dry conditions. In 2022, for the first time in the history of the SWP, the initial allocation was zero percent. This drought sequence was then followed in 2023 by the first 100 percent allocation in nearly 20 years, equivalent to over 1.9 million AF allocated to Metropolitan. As of February 2025, the allocation stands at 35 percent (DWR 2025).

Declines in the Bay-Delta's ecosystem are caused by several factors, including channelization of waterways, land reclamation and habitat reduction, climate change, introduction of invasive species, predation of native fish species, urban and agricultural discharge, and changing ecosystem food supplies. This has led to a series of water supply restrictions, including water quality objectives and biological regulations established by the SWRCB, the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the National Marine Fisheries Service (NMFS). SWP long-term average supply reliability has decreased from 71 percent of total contracted supplies in 2005 to 56 percent in 2023 largely due to such regulatory restrictions (DWR 2024a; DWR 2024b).

3.1.1.3 Groundwater

Groundwater pumping represents more than 35 percent of Southern California's drinking water, making replenishment and storage programs for groundwater basins critically important. Metropolitan's service area overlies numerous groundwater basins, most of which rely on artificial recharge to sustain groundwater pumping, and some of which are threatened by seawater intrusion and contamination. In Los Angeles County, many of these groundwater basins are adjudicated, meaning that pumping rights are established and overseen by a court-appointed watermaster.

Groundwater basins and local reservoirs dropped to very low operating levels due to record low precipitation in Southern California in 2016. More than 62 percent of the groundwater basins in Metropolitan's service area were below their operating range during this time (Metropolitan 2021). Due to greater precipitation in 2017, 2019, 2023, and 2024, the groundwater basins have begun to recover, but remain below healthy storage levels. Current groundwater pumping in the Metropolitan service area is approximately 1.1 million AFY (Metropolitan 2023). However, more than 8 percent of these basins are experiencing declines in storage levels and approximately 48 percent are below their established operating ranges despite back-to-back wet years in 2023 and 2024.

Maintaining groundwater storage levels within a basin's operating range is key to sustaining groundwater supplies and preventing loss of groundwater pumping capability. Although Metropolitan does not own or manage groundwater basins in Southern California, it plays a critical role as the region's supplemental water supplier by helping replenish the basins and financially supporting groundwater recovery projects. Metropolitan also pre-delivers water to groundwater basins before a member agency has a demand for the water when Metropolitan has large amounts of supply and storage capacity is limited, allowing the member agency to purchase the delivered water on a long-term schedule. Although this type of program does not hold stored water for Metropolitan, it does provide water resource management flexibility (Metropolitan 2021).

During wet years in which imported supplies are available in quantities over and above what is needed for regional demands and groundwater replenishment, Metropolitan stores surplus water supplies in its surface reservoirs. Conversely, in dry years where available imported supplies are below what is needed for regional demands and groundwater recharge, water supplies must be withdrawn from Metropolitan storage programs to meet those demands. If conditions are severe enough that water supply is insufficient from both imported sources and Metropolitan storage programs, then replenishment water cannot be delivered to the local agency groundwater basins and those basins may reach levels that result in the reduction of groundwater pumping available to meet regional demands. These challenging supply conditions are also likely to coincide with years of lower natural groundwater replenishment from precipitation, further affecting local agency groundwater basin levels (Metropolitan 2021).

3.1.1.4 Seismic Events

Both the CRA and California Aqueduct cross the San Andreas Fault in Southern California prior to reaching Metropolitan's service area. While water deliveries have not been affected by seismic activity to date, a strong earthquake (magnitude 7.8 or greater) along the San Andreas Fault system could severely damage the CRA and/or the California Aqueduct, potentially causing protracted outages of the facilities and the subsequent halt of the flow of imported water. Potential outages are estimated to range from a few months to up to five years, as follows:

- Colorado River Aqueduct: 2 to 6 months (recovery of 80 percent capacity) or 3 to 5 years (recovery of 100 percent capacity)
- California Aqueduct East Branch: 12 to 24 months
- California Aqueduct West Branch: 6 to 12 months (Metropolitan 2017, 2018, 2020)

In the aftermath of such an event, Metropolitan's service area would need to rely entirely on local supplies, surface storage in reservoirs, and groundwater while repairs are being made to the facilities. Adequate local supply available during a seismic outage was estimated to range from 1 to 1.2 million AF (Metropolitan 2021). Since recycled water projects such as Pure Water are assumed to be 100 percent available during a seismic outage, Pure Water could increase local supplies by up to 15 percent during a seismic emergency. Increasing the effective local supply available during the emergency could reduce pressure on Metropolitan's emergency storage reserves (Metropolitan 2023).

Pure Water also could improve the seismic resilience of the region by enhancing and maintaining the storage level in groundwater basins before a major seismic event, and by providing a reliable, local supply of high-quality water for groundwater replenishment and for RWA throughout the emergency. During an emergency, the region would rely heavily on groundwater production, which Pure Water

would support. Purified water from Pure Water would be available to keep water flowing as replenishment water to the groundwater basins to maintain production throughout the emergency. Using additional local groundwater and RWA during an emergency would allow Metropolitan to move what imported water is available to the areas where it is needed most (Metropolitan 2023).

3.1.1.5 Climate Change

Climate change is projected to impact supplies on the Colorado River, SWP, and other local agency supplies that rely on annual hydrology and the water cycle. For example, the Colorado River Basin's natural flow decreased by roughly the volume of Lake Mead during the 2000-2021 megadrought, increased aridification in snowpack regions resulting in water losses has occurred at roughly twice the rate of non-snowpack regions, and present-day natural flows have declined by over 10 percent due to warming associated with human activities (Metropolitan 2024). In Southern California, less stormwater is percolating into groundwater basins from too much rain at some times and not enough rain at others (Metropolitan 2023). It is anticipated that climate change will continue to exacerbate water supply constraints through a variety of factors such as reduction in Sierra Nevada snowpack, prolonged drought periods, changes in runoff pattern and amount, and rising sea levels resulting in impacts such as seawater intrusion into coastal groundwater basins and erosion of levees in the Bay-Delta (Metropolitan 2021). While conservation and recent above-average snowpack in the Upper Colorado River Basin mitigated immediate effects of the recent megadrought, reduced inflow into the Colorado River system due to drought and climate change is anticipated to be an ongoing concern (Metropolitan 2024). In addition, projected warmer temperatures in Southern California would increase water requirements for plant life and landscapes, as well as increase evaporation rates in reservoirs (Metropolitan 2016).

Climate change also has the potential for other adverse effects on the water supply system. Aging infrastructure may be more vulnerable to extreme storm events, and the number and scale of capital improvement projects is anticipated to increase to respond to changing circumstances. Constraints on hydropower from fluctuating water flows and climate vulnerabilities of the electrical grid (e.g., strain during extreme heat events, shutdowns during high wind events) may also affect electrical power generation and access (Metropolitan 2024). Water conservation, storage, and innovation will be required to meet these climate challenges and to address future water shortages caused by dramatic swings in annual hydrologic conditions.

3.1.2 Integrated Water Resources and Climate Adaptation Planning

Metropolitan has conducted long-range planning for its water resources portfolio since the mid-1990s using an IRP process. The IRP serves as Metropolitan's long-term, comprehensive water resources strategy to provide member agencies with a reliable and affordable water supply. After its first adoption in 1996, the IRP has been updated approximately every five years to adapt to changing conditions that affect water resource reliability. While past IRPs incorporated uncertainties based on annually variable hydrologic conditions, the current IRP process explicitly plans for a wide range of uncertainties through scenario planning by integrating available water resources data and impacts from climate change into demand models.

3.1.2.1 Regional Needs Assessment

Phase 1 of the 2020 IRP provided a Regional Needs Assessment, adopted by Metropolitan's Board in April 2022, which identifies significant threats facing Southern California's water supply reliability

through successive qualitative and quantitative analysis steps (Metropolitan 2022). Through a collaborative process that involved the Board and the public, Metropolitan identified future uncertainty in water reliability due to major drivers such as climate change, demographic and economic changes, water use efficiency, regulations, and local supply development. The planning process explored and quantified potential water supply reliability outcomes through 2045 under the following four different planning scenarios:

- Scenario A: Low Demand, Stable Imports
- Scenario B: High Demand, Stable Imports
- Scenario C: Low Demand, Reduced Imports
- Scenario D: High Demand, Reduced Imports

No scenario should be regarded as "most likely" or "preferred" as each scenario has entirely plausible outcomes relative to each other. It is important to note that current water supply conditions are like those envisioned under Scenario D. Under Scenario A, no additional water is needed. For the remaining scenarios, Metropolitan would need between 100,000 AF and 650,000 AF of new annual core water supply, which consists of water supply that is generally available and used every year to meet demands under normal conditions. If the new core supply is not developed, regional reliability targets for the region would not be met, which would increase pressure on imported water supplies and increase the likelihood of future net shortages in water supply (Metropolitan 2022).

Consistent with the findings of the Regional Needs Assessment, Metropolitan is implementing a multi-faceted approach to address future net shortages by drawing on a combination of the following: additional core supply; additional flexible supply (supply that is implemented on an as-needed basis and may or may not be available for use each year); additional storage capacity; and distribution system flexibility. Pure Water would add 155,000 AFY to Metropolitan's core supply, which would help reduce the likelihood of future net shortages and contribute to regional reliability targets (Metropolitan 2023).

3.1.2.2 Climate Adaptation Master Plan for Water

The completion and Board approval of the Regional Needs Assessment and observed changes in climate trends and changing hydrology signaled the increasing need to integrate climate adaptation into planning for the future. In February 2023, Metropolitan's Board directed staff to integrate water resources, climate, and financial planning into a Climate Adaptation Master Plan for Water (CAMP4W). Specifically, CAMP4W includes: (1) climate and growth scenarios; (2) time-bound targets for addressing the needs identified in the Regional Needs Assessment and other policy goals; (3) a framework for climate decision making and reporting; (4) policies, initiatives, and partnerships; and (5) business models and funding strategies. CAMP4W will increase Metropolitan's understanding of the climate risks to water supplies, infrastructure, operations, workforce, and financial sustainability and will develop decision-making tools and long-term planning guidance for adapting to climate change to strengthen Metropolitan's ability to fulfill its mission. CAMP4W is intended to provide Metropolitan's Board with the tools and information to assess projects and make decisions on how and when, or if, they should be implemented (Metropolitan 2025).

3.2 BENEFITS OF PURE WATER

Implementation of Pure Water would provide regional benefits to all Metropolitan member agencies by replacing portions of current and future imported deliveries with purified water as well as increasing Metropolitan's storage. Regional benefits include: (1) maintaining local water supplies and improving resilience to climate change; (2) reducing reliance on imported water; and (3) improving regional reliability in Metropolitan's service area. These benefits are discussed below.

3.2.1 Maintaining Local Water Supplies and Improving Resilience to Climate Change

A major source of water supply in Metropolitan's service area is groundwater, which is dependent on both natural recharge and imported water replenishment. Over the past 30 years, Metropolitan has delivered an average of 213,000 AFY of imported water for groundwater recharge in Metropolitan's jurisdiction or service area; however, groundwater replenishment deliveries have not been made in sufficient quantities or in a consistent manner to maintain basin groundwater levels within the operating range established by the watermaster for each groundwater basin. Several factors have contributed to this deficit, including drought conditions, regulatory restrictions, and replenishment purchase patterns. Region-wide drought conditions have reduced the availability of imported replenishment water. Local drought conditions have resulted in increased groundwater demand and reduced natural replenishment. Groundwater storage has dropped by over 1 million AF since 2000. Climate change is expected to result in increased variability and unpredictability related to precipitation and evapotranspiration, both of which affect regional and local water supplies. Natural groundwater recharge and the availability of imported replenishment water could become increasingly diminished because of reduced precipitation and increased evapotranspiration at the local and regional level.

Pure Water would help maintain local water supplies by recharging groundwater basins, thus sustaining groundwater levels and maintaining groundwater as a major local source of potable water. Compared to water supply sources such as local stormwater and imported water, the water supplied by Pure Water would be climate-resilient because it is not dependent upon stormwater runoff and capture, nor is it subject to climate or hydrologic variations. Since the purified water supply would be separate from the hydrologic cycle, Pure Water would be able to deliver purified water under all weather conditions and produce water supplies outside of natural systems that could be adversely affected by climate change. Protections against drought and climate change introduce a water security benefit not available with any other Metropolitan water sources (Metropolitan 2023).

3.2.2 Reducing Reliance on Imported Water

Metropolitan currently provides wholesale water services to its 26 member agencies, relying on a combination of water resources from the Colorado River and SWP, reduction in demand through local resources and conservation, and an integrated conveyance and distribution system. Metropolitan faces many challenges to meet the anticipated demands of its member agencies, including long-term drought in both the Northern California and Colorado River watersheds, climate change, regulatory and environmental restrictions, changing hydrological and biological conditions in the Bay-Delta, regulatory uncertainty along the Colorado River, and unresolved issues with the development of a Delta Conveyance initiative. These challenges can result in variable and severe water delivery restrictions.

Pure Water would help ensure a reliable supply of water in the face of these ongoing and increasing uncertainties because it would be part of Metropolitan's integrated core supply in the same way that the SWP and CRA are part of Metropolitan's service. Therefore, Pure Water would offer significant regional benefits for Metropolitan and all of the southwestern United States. While Pure Water would help to maintain groundwater production, as discussed above, it also would help to prevent a strain on regional water supply reserves, as well as complement other Metropolitan initiatives by providing reliable replenishment supplies that free up imported water for the environment or to be placed in storage as a drought buffer.

In addition, imported supplies historically have provided water for the region's storage portfolio for use in years when normal water supplies are scarce. With Pure Water supplying replenishment water, Metropolitan would have added flexibility to capture and store more imported water during wet years, both within and outside of its service area. Implementation of Pure Water could free up to 155,000 AFY of capacity in the existing Metropolitan conveyance, distribution, and storage systems, and would thus provide Metropolitan greater flexibility on directing the water to where it is needed the most (Metropolitan 2023).

3.2.3 Improving Regional Reliability in the Service Area

Pure Water would improve regional reliability of water supplies by lowering the risk of net shortages, increasing reliability during a seismic or extreme weather event that could disrupt current water deliveries, and increasing system-wide operational flexibility. By becoming part of Metropolitan's core water supply, Pure Water would reduce the risk of regional net shortages, which occur when all available supplies, including accessible storage, are depleted and there remains unmet demand from Metropolitan's member agencies. Pure Water would also benefit the Metropolitan service area in the event of a catastrophic earthquake by increasing the opportunities to ensure that water supplies are maintained in the region. The CRA and California Aqueduct cross the San Andreas Fault and could be severely damaged as result of a strong earthquake. The extent of damage from this type of event could potentially cause protracted outages of the CRA and California Aqueduct, halting the flow of imported water. In the aftermath of such an event, the region would need to rely entirely on local supplies such as Pure Water, surface storage in reservoirs, and groundwater production while repairs are being made to imported water facilities. Pure Water would be located on the coastal side of the San Andreas Fault with the nearest Pure Water facilities more than 20 miles away from the fault, which could make the water produced from Pure Water available during a major earthquake event along the San Andreas Fault and significantly improve the seismic resilience of the region.

With a service area spanning 5,200 square miles in six Southern California counties, Metropolitan has built an integrated conveyance and distribution system to ensure consistent supplies, reliability, and flexibility throughout the region. The interconnected nature of the system means that Metropolitan can address constraints in one area of the system for the benefit of the entire system. For example, at any time, one area could be served exclusively from one supply source, while another area could be served by a blend of water sources. The need to change the water sources may arise either from the unavailability of a water resource, a water quality issue related to a resource, rehabilitation of aging facilities, or other reasons. The integration of its water resources and system flexibility is fundamental to Metropolitan's wholesale water service. Pure Water would provide an additional local water supply source, thus increasing the options available to meet demands throughout Metropolitan's service area. It would also free up capacity in the existing conveyance, distribution, and storage systems for increased flexibility for capturing and conveying water supplies. The additional (i.e., freed up) imported water

resulting from demands met by Pure Water would also increase Metropolitan's water resource portfolio, including through bolstered storage within and outside of Metropolitan's service area (Metropolitan 2023).

3.3 OBJECTIVES FOR PURE WATER

Consistent with the needs for and benefits of Pure Water as discussed above, the following objectives have been established for this program:

- Provide a new high-quality local water source that is reliable, cost-effective, and climate-resilient to help meet regional water demands, with expedited or phased deliveries of such supplies where feasible;
- Diversify Metropolitan's water supply portfolio, increase regional operational flexibility, and provide opportunities for improved coordination and potential future integration with other water supply and distribution systems;
- Contribute to improving water supply resiliency and overall water quality of local groundwater basins;
- Provide advanced water purification to maximize beneficial reuse of wastewater that would otherwise be discharged into the ocean, while maintaining compliance with water quality requirements for ocean discharge;
- Further statewide goals of increasing use of recycled water as a sustainable, environmentally sound water source for indirect and direct potable reuse;
- Reduce reliance on imported water supplies and provide greater resilience of local water supplies; and
- Increase the locally available water supply to protect against seismic events impacting imported water supplies and other service disruptions.

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4.0 PROJECT PHASING AND DETAILED DESCRIPTION

CEQA Guidelines Section 15124(c) requires an EIR to include a "general description of the project's technical, economic, and environmental characteristics." In addition, CEQA Guidelines Section 15124(d) requires a statement "briefly describing the intended uses of the EIR," including "a list of the agencies that are expected to use the EIR in their decision making" and "a list of permits and other approvals required to implement the project," to the extent they are known.

To that end, this chapter first reviews the anticipated phasing for Pure Water, which is pertinent to the discussion that follows. This chapter then provides a detailed description of Pure Water's facilities and components and the associated construction and operational activities, followed by a more general discussion of the economic and fiscal aspects of the program. This chapter then concludes with a summary of those agencies Metropolitan anticipates would rely on this EIR in making discretionary decisions related to Pure Water and the permits and approvals likely to be required to advance the program.

4.1 PHASING

To meet Pure Water's ultimate production capacity of 150 MGD, construction and operation of its facilities and components are anticipated to occur in two primary phases. Phase 1 would focus on production and conveyance of up to 115 MGD of purified water; Phase 2 would focus on production and conveyance of the remaining 35 MGD of purified water. These phases are described below and summarized in **Table 4-1**.

4.1.1 Phase 1

Phase 1 would involve construction of key Pure Water facilities and components, including: (1) the Warren Facility improvements, the AWP Facility, and certain ancillary facilities, all of which would be located at the Joint Treatment Site; (2) the backbone conveyance system, which includes a 39-mile backbone pipeline stretching from the City of Carson to the City of Azusa, pump stations, and service connections; (3) spreading facilities and injection wells at groundwater recharge sites in the West Coast, Central, and Main San Gabriel groundwater basins; (4) DPR facilities at the Weymouth WTP in the City of La Verne and associated conveyance facilities; and (5) facilities to serve non-potable end uses predominantly in the South Bay. Additionally, the Workforce Training Center would be constructed during this phase to promote workforce development and employment at the earliest practicable time. Lastly, several existing Sanitation Districts support facilities that are currently within the footprint of the AWP Facility would be demolished and rebuilt elsewhere within the Warren Facility during this phase.

Construction of Phase 1 facilities is anticipated to start in 2027 and be completed by 2035.

4.1.1.1 Initial Delivery Subphase

To expedite production and delivery of purified water to the region, Metropolitan would develop an Initial Delivery Subphase as part of Phase 1. This subphase would focus on treating up to 30 MGD to IPR standards and would involve construction of (1) a portion of the AWP Facility and required ancillary

facilities and (2) approximately 14 miles of the backbone conveyance system (Reaches 1 and 2[1]). This water would be delivered for non-potable uses via service connections in and around the cities of Carson and Long Beach and for IPR purposes via groundwater recharge in the West Coast and Central groundwater basins. The Workforce Training Center and new Sanitation Districts support facilities also would be constructed as part of the Initial Delivery Subphase.

Construction of these Initial Delivery facilities is anticipated to start in 2027 and be completed by 2033.

4.1.1.2 Continuation of Phase 1

Construction would proceed through the remainder of Phase 1 on an ongoing basis with expansion of the AWP Facility to produce approximately 85 MGD of additional water treated to IPR standards for a total of 115 MGD of purified water. The Warren Facility improvements, approximately 25 miles of the backbone conveyance system (Reaches 3 to 8), and groundwater recharge facilities also would be completed during the remainder of this phase. In addition, facilities would be constructed at the Weymouth WTP to further treat 25 MGD of the output from the AWP Facility to DPR standards. IPR water would be conveyed from a point near the terminus of the backbone pipeline to these DPR treatment facilities via the existing Azusa Pipeline. To accomplish this, the Azusa Pipeline would be retrofitted and certain associated conveyance structures, including pipelines, interconnections, and pump stations, would be constructed.

Construction of these remaining Phase 1 facilities is anticipated to start between 2029 and 2032 (depending on the component) and be completed by 2035.

4.1.2 Phase 2

Phase 2 would involve expansion of the AWP Facility to produce approximately 35 MGD of additional water for a total of 150 MGD of purified water. Phase 2 also would include construction of additional DPR treatment facilities, which could be located at one of three locations: the AWP Facility, the Weymouth WTP, or a satellite location.

If DPR treatment facilities are located at the AWP Facility, then all 150 MGD of the AWP Facility's output would be purified to DPR standards. Of this, 90 MGD would be delivered along the backbone pipeline for IPR purposes and non-potable uses, while the remaining 60 MGD would be delivered to the Weymouth WTP for DPR purposes. In contrast, if the DPR treatment facilities are located at the Weymouth WTP or a satellite location, then the AWP Facility would treat 150 MGD to IPR standards, and approximately 60 MGD of that water would be further purified to DPR standards at the Weymouth WTP or satellite location. For the purposes of analysis in this EIR, it is assumed that any Phase 2 DPR treatment facilities would be located at the AWP Facility.[2]

Regardless of the location of the Phase 2 DPR treatment facilities, all three options for DPR treatment would require conveyance of 60 MGD of purified water from the AWP Facility through the backbone

[1] The backbone pipeline is comprised of a total of eight reaches as shown in Figure 2-3.
[2] Phase 2 DPR treatment is assumed to be located at the AWP Facility because that option would involve the greatest amount of treatment to DPR standards and associated operational requirements and impacts. Additionally, it is the only option the location of which is currently known and thus able to be analyzed.

pipeline to the Weymouth WTP for integration into Metropolitan's system. This would require construction of an entirely new pipeline, referred to as the DPR pipeline, and another pump station.

Construction of Phase 2 facilities is anticipated to start in 2035 and be completed in 2040.

Table 4-1
PHASING SUMMARY

Program Component	Construction Schedule	Operations	
		Purified Water Volume and Standard	Start Date
Phase 1			
Initial Delivery Subphase			
AWP Facility and Ancillary Facilities (approx. 30 MGD)	2027 through 2033	30 MGD Total (IPR Only)	2033
Workforce Training Center			
Backbone Conveyance System (Reaches 1-2)			
Recharge Facilities			
Non-potable Water Facilities			
Sanitation Districts Support Facilities			
Continuation of Phase 1			
AWP Facility and Ancillary Facilities (approx. +85 MGD)	2029 through 2035	115 MGD Total (90 MGD IPR & 25 MGD DPR)	2035
Warren Facility Improvements			
Backbone Conveyance System (Reaches 3-8)			
Recharge Facilities			
DPR Treatment Facilities at Weymouth WTP			
Azusa Pipeline Retrofit			
Phase 2			
AWP Facility and Ancillary Facilities (+35 MGD)	2035 through 2040	150 MGD Total (90 MGD IPR & 60 MGD DPR)	2040
DPR Treatment at AWP Facility, Weymouth WTP, or Satellite Location			
DPR Pipeline			

4.1.3 Adjustments to Phasing Schedule

As with any project of this size, it is possible that the phasing for Pure Water may need to be adjusted to accommodate various construction, operational, or financial constraints as work progresses. In particular, it is anticipated that the two main phases for Pure Water may be further divided into various stages that are pursued over a longer period of time. Nonetheless, for purposes of this EIR the environmental analysis focuses on Pure Water's final buildout capacity of 150 MGD to assess the full scope of potential construction and operational impacts. Likewise, modeling of potential impacts conservatively assumed that construction of its facilities and components would occur on a more compressed schedule than noted above, since a longer schedule would be expected to reduce various impacts. Where relevant, the issue of phasing is addressed in more detail in Chapter 5, *Environmental Impact Analysis*, as part of the analysis of potential impacts for specific environmental resource categories.

If adjustments are made to the phasing schedule after Pure Water is approved, they will be assessed in accordance with the criteria set forth in PRC Section 21166 and CEQA Guidelines Sections 15162, 15163, 15164, and 15168 to determine whether any additional environmental review and analysis are required.

4.2 FACILITIES AND COMPONENTS

Different levels of detail and information exist for the various facilities and components that would be part of Pure Water. In general, there currently is more certainty with respect to the proposed location, design, construction, and operation of the AWP Facility and backbone pipeline, and less certainty with respect to the proposed pump stations and service connections associated with the backbone conveyance system and with the recharge, DPR, non-potable water, and Sanitation Districts support facilities. As a result, this EIR assesses potential environmental impacts at different levels depending on the available information.

4.2.1 Joint Treatment Site

As indicated earlier, the Joint Treatment Site would include improvements to the Warren Facility, a new AWP Facility, and a new Workforce Training Center. It would occupy portions of the existing Warren Facility and adjacent property also owned by the Sanitation Districts. The Joint Treatment Site would be located near the southwestern limits of the City of Carson, generally bounded by Interstate 110 (I-110) to the west, Main Street to the east, Lomita Boulevard to the south, and Sepulveda Boulevard to the north (except for the Workforce Training Center, which would be immediately north of Sepulveda Boulevard). Residential land uses are generally located to the north and south of the Joint Treatment Site, commercial land uses are generally located to the east, and industrial and commercial land uses are located to the west. The boundaries of the Joint Treatment Site, the Warren Facility and proposed improvements, the AWP Facility, and the Workforce Training Center are shown on **Figure 2-2**.

Although mostly vacant now, the location of the proposed AWP Facility was formerly an oil refinery owned by Fletcher Oil and Refining Company, which terminated operation in 1992. The Sanitation Districts acquired the property in 2000 and, in 2007, assumed responsibility for remediation of the soil and groundwater at the site, which was necessary due to contamination with petroleum products. Based on the progress of site remediation to date, the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Board) determined that no further action is needed for the top 30 feet of soil. A Covenant and Environmental Restriction was executed and recorded by the Sanitation Districts to limit the use of the site to commercial/industrial applications, such as Pure Water. The Sanitation Districts are now proceeding with remediation of the soil that is greater than 30 feet below the ground surface and known sources of contaminated groundwater. Remediation activities for the soil greater than 30 feet below ground surface and groundwater are expected to continue through construction and operation of the AWP Facility.

4.2.1.1 Warren Facility Improvements

Development of Pure Water would require that certain improvements be made at the Warren Facility. The Warren Facility is a wastewater treatment facility with a permitted annual average daily flow capacity of 400 MGD. It consists of wastewater treatment facilities, a laboratory, equipment maintenance and storage, energy recovery, solids processing, and administrative and field office facilities. The Warren Facility currently provides primary and secondary treatment of wastewater for approximately 3.5 million people or an average of approximately 250 MGD of wastewater. Primary treatment involves a series of steps that removes coarse materials and suspended solids to produce primary effluent. The primary effluent is then pumped to the secondary treatment process, which removes suspended and dissolved organic matter. The secondary effluent, or cleaned wastewater, is then disinfected before it is discharged to the ocean through a network of tunnels and outfall pipes that

extend two miles offshore and 200 feet deep into the Pacific Ocean. This cleaned wastewater would serve as the source of water that would be purified by the AWP Facility.

The primary and secondary treatment processes at the Warren Facility produce biosolids, which undergo centrifuge dewatering to separate the liquid from the solids. The solids are stored in silos before being transported offsite for land application, composting, or landfilling. The remaining liquid, called centrate, returns to the Warren Facility's headworks where it undergoes primary and secondary treatment again. The repeated treatment processes produce levels of nitrogen in the cleaned wastewater that are higher than optimal for purification at the AWP Facility.

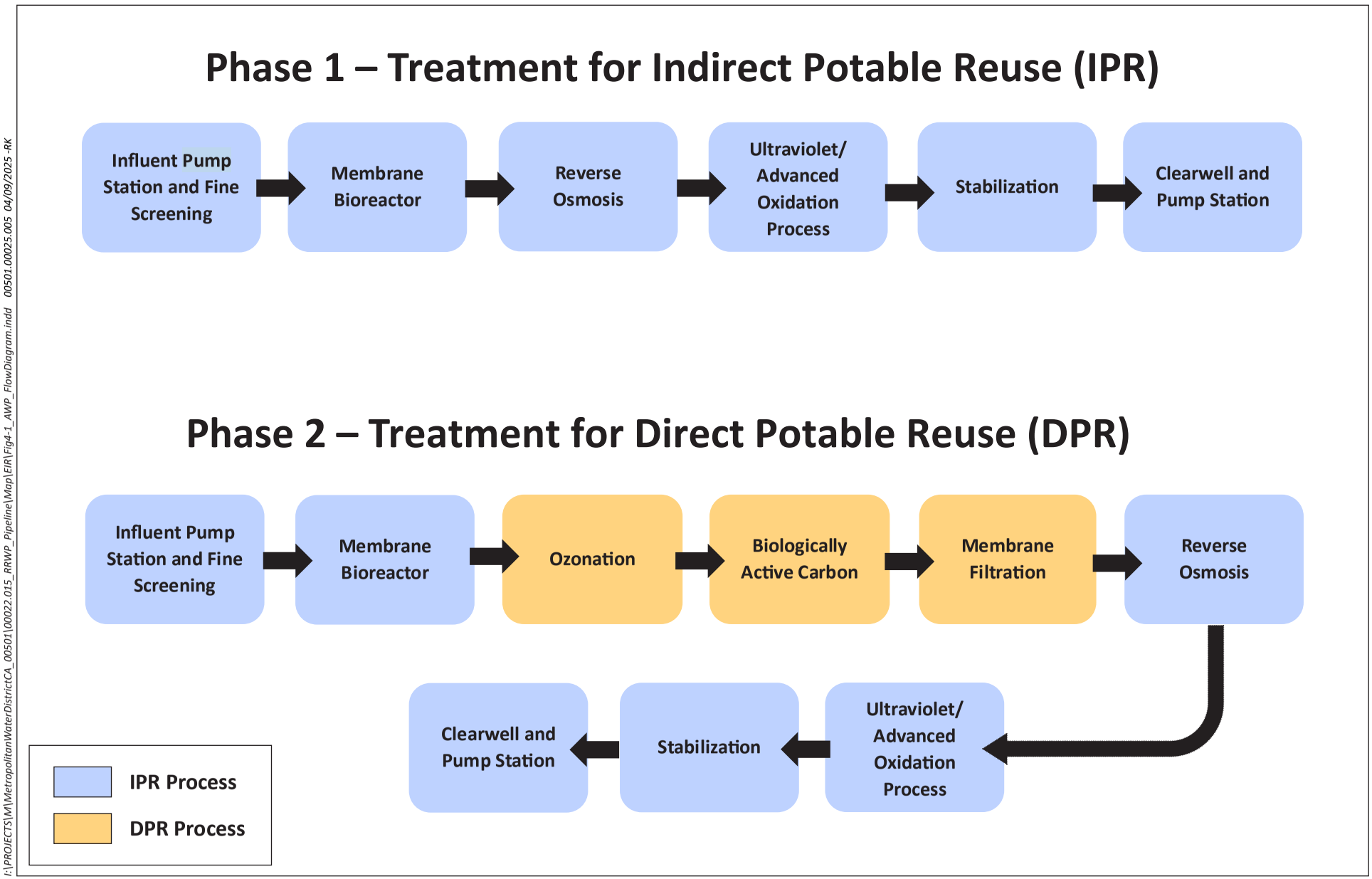
Accordingly, as part of Pure Water, the Sanitation Districts would add sidestream centrate treatment to the Warren Facility's existing treatment process to reduce the amount of nitrogen in the centrate and, in turn, in the cleaned wastewater going to the AWP Facility. Sidestream centrate treatment reduces nitrogen in the centrate by using microorganisms to remove nitrogen from the centrate; using specialized bacteria to convert ammonia to nitrogen gas; using membranes to separate the treated water from the solids; and adding chemicals to the centrate to precipitate out various nutrients. The sidestream centrate treatment system would be located within the limits of the Joint Treatment Site, northwest of the AWP Facility (refer to Warren Facility Improvements on **Figure 2-2**), and would be powered by renewable energy that is currently generated at the Warren Facility. Ancillary facilities that would be required to operate the sidestream centrate treatment system include a centrate pump station and conveyance piping, process air compressors and conveyance ducting, chemical/nutrient supply and conveyance piping, building(s) for electrical facilities and blowers, treated centrate conveyance piping, and associated electrical and chemical equipment and instrumentation.

In addition to the sidestream centrate treatment system, yard piping would be installed within the Warren Facility to facilitate use of purified water for non-potable applications, such as industrial/treatment and irrigation uses. Yard piping would consist of new 8- to 12-inch diameter pipelines that would distribute the purified water from the AWP Facility to various locations around the Warren Facility. Minor modifications may be required to connect the new piping to existing facilities and structures.

4.2.1.2 AWP Facility

The cleaned wastewater produced at the Warren Facility would undergo advanced water purification via the treatment processes described below. The processes are discussed in sequential order and are depicted on **Figure 4-1**. A proposed site plan of the AWP Facility and its proposed phasing are presented as **Figure 4-2** and a three-dimensional rendering of the AWP Facility is provided as **Figure 4-3**.

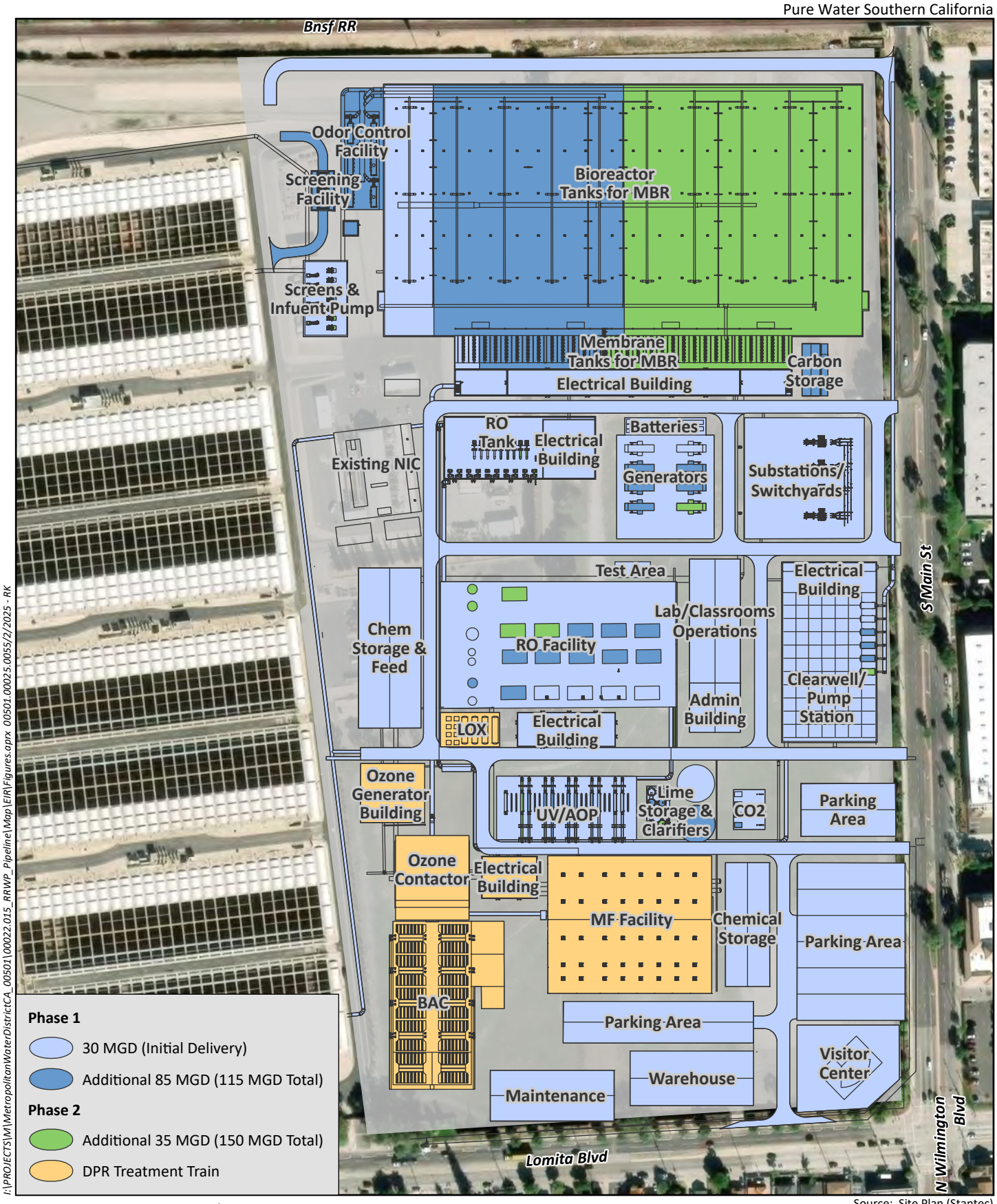
As discussed earlier in Section 4.1, implementation of Pure Water would be divided into two main phases. Among other proposed work, Phase 1 would involve purification of up to 115 MGD of cleaned wastewater at the AWP Facility. Phase 2 would involve expansion of the AWP Facility to purify an additional 35 MGD, bringing the total output of the AWP Facility to 150 MGD. Phase 2 also could include the construction of additional treatment facilities at the AWP Facility to enable purification of all 150 MGD to DPR standards. Facilities and the treatment processes for IPR and DPR at the AWP Facility are described below.



PURE WATER SOUTHERN CALIFORNIA

AWP Facility Process Flow Diagram

Figure 4-1



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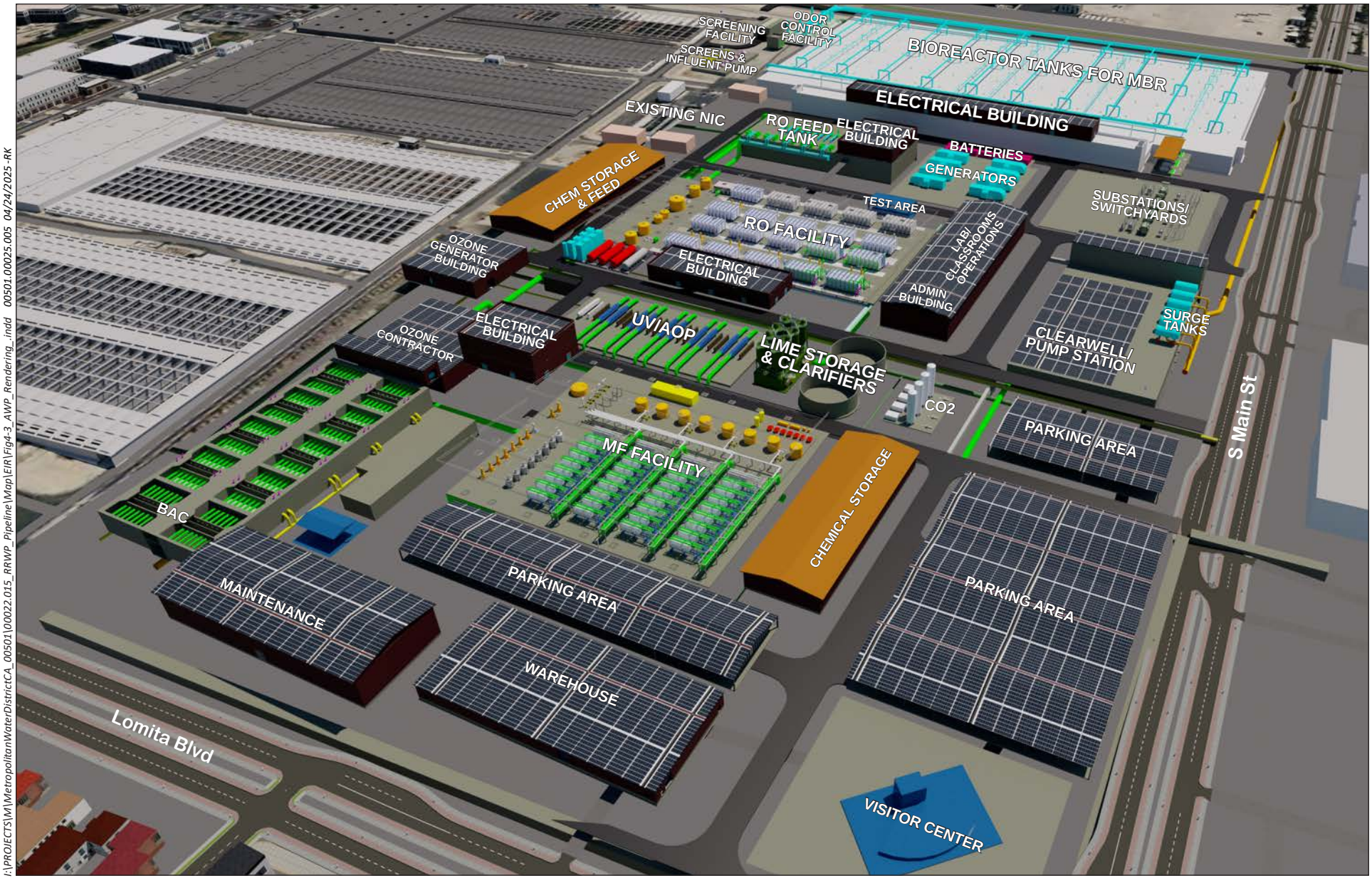
Source: Site Plan (Stantec)

PUREWATER SOUTHERN CALIFORNIA

AWP Facility Site Plan and Phasing

Figure 4-2



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PURE WATER SOUTHERN CALIFORNIA

AWP Facility 3D Rendering

Figure 4-3

IPR Treatment Process

Influent Pump Station and Fine Screening

The first stage of the advanced water purification process involves pumping the cleaned wastewater from the Warren Facility to a centralized fine screening facility. Once the cleaned wastewater enters this stage of the advanced water purification process, it is referred to as influent for the purposes of Pure Water. The fine screening facility would screen out any remaining solid waste materials from the influent that might have been left over from the primary and secondary treatment processes at the Warren Facility. The screened-out materials would be compacted and dewatered, and the dewatered screenings would then be collected and hauled offsite for disposal. The remaining influent would be pumped to the next stage of the purification process. The influent pump station would be approximately 6,800 square feet (SF) with a height of 20 feet above grade. The screening facility would be approximately 3,700 SF with a height of 22 feet above grade.

Membrane Bioreactor

After fine screening, the influent would go through additional treatment consisting of a membrane bioreactor (MBR) process. MBR systems consist of tanks that use microorganisms and membrane filters to clean water. The bioreactors convert undesirable organic matter into harmless constituents and the membrane filters prevent passage of suspended solids, bacteria, and other organisms. The constituents filtered out of this process would be sent back for treatment at the Warren Facility while the resulting water, called MBR filtrate, would go to the next stage of treatment, which is reverse osmosis (RO). The MBR system would be approximately 426,600 SF extending to a depth of approximately 30 feet below ground surface.

Metropolitan Grace F. Napolitano Innovation Center – Membrane Bioreactor System

The bioreactor and membrane tanks would be covered, and off-gas from the tanks would be directed to an odor control facility that would be constructed adjacent to the tanks. The odor control facility would treat the sulfides, odors, and volatile organic compound (VOC) emissions that are generated from the MBR process as well as odors from the influent pump station and screening facility. The odor control facility would be approximately 12,000 SF with a height of 35 feet above grade.

Reverse Osmosis

As discussed above, the MBR process produces MBR filtrate, which would undergo RO as the next stage of purification. The MBR filtrate would be conveyed by high-pressure pumps to the RO system. The RO system would consist of multiple racks containing various components, including valves, membranes, instrumentation, and pumps to push the MBR filtrate through the RO system. The RO system would remove dissolved constituents and microscopic materials from the water and eliminate more than 99 percent of impurities, including total organic carbon, total dissolved solids, total nitrogen, viruses, bacteria, pesticides, and pharmaceuticals. The RO facility would be approximately 105,500 SF with a height of 45 feet above grade.

Metropolitan Grace F. Napolitano Innovation Center – Reverse Osmosis Train

The RO process would result in a stream of water with impurities called RO concentrate and a stream of water without these impurities called RO permeate. The RO permeate would serve as influent for the next stage of purification, which is ultraviolet/advanced oxidation. The RO concentrate would be blended with the Warren Facility's cleaned wastewater and discharged to the ocean via the existing Warren Facility outfall system. The Sanitation Districts have conducted a study to confirm that this discharge would comply with current regulatory requirements (Sanitation Districts 2022).

Ultraviolet/Advanced Oxidation Process

The RO permeate produced from the RO process would be treated with an ultraviolet/advanced oxidation process (UV/AOP) to remove trace chemical compounds that may remain through the previous phases of water purification. The UV/AOP provides pathogen and chemical control by using UV light in combination with an oxidant to break down contaminants that can pass through the RO system. UV light could be provided by low or medium pressure UV lamps, while oxidation could be provided by the addition of sodium hypochlorite or hydrogen peroxide. The UV/AOP facility would be approximately 31,800 SF with a height of 30 feet above grade.

Stabilization

After undergoing RO and UV/AOP, the purified water would require stabilization due to its low levels of calcium, pH, and alkalinity to reduce its corrosive nature on facilities. Typical stabilization can include use of lime, calcium chloride, or sodium hydroxide, followed by the addition of carbon dioxide for final alkalinity and pH adjustment.

After stabilization, chlorine would be added to the purified water, which would then be directed to a clearwell for storage before being pumped to the backbone pipeline. The clearwell and associated pump

station are described below after the DPR treatment process as these facilities are required after both IPR and DPR treatment.

DPR Treatment Process

DPR treatment at the AWP Facility would be developed during Phase 2 and would include the addition of ozonation, biologically activated carbon (BAC) filtration, and membrane filtration (MF). The DPR treatment process would be integrated within the IPR process, specifically between MBR and RO, which would alter the sequence of treatment and would purify all water to DPR standards. **Figure 4-1** depicts the sequence for the IPR and DPR treatment processes.

Ozonation

The first step of the DPR treatment process consists of ozonation, which involves the addition of ozone between the MBR and RO systems to oxidize and eliminate contaminants. To accomplish this, MBR filtrate would be conveyed from the MBR tanks to basins where ozone would be added to the MBR filtrate. The ozone basin facility would be approximately 22,200 SF with a total height of 21 feet (7 feet below grade and 14 feet above grade). Ozone would be produced onsite by converting liquid oxygen into ozone via ozone generators. Excess ozone would be treated through ozone destruct units where it would be converted to oxygen gas before it is released back into the atmosphere.

Biologically Activated Carbon

After the ozonation process, the water would be conveyed to the BAC filtration system. The BAC filters would contain carbon to remove organic matter from the water prior to the next stage of treatment, MF. The BAC filtration system would be approximately 54,800 SF with a total height of 30 feet (12 feet below grade and 18 feet above grade).

Each filter would be backwashed approximately once per week to remove collected materials. Waste from the washing cycle would be collected in tanks and either pumped for discharge back to the Warren Facility headworks or sent back to an earlier stage in the Pure Water purification system for additional treatment.

Membrane Filtration

Following BAC filtration, the water would be conveyed to a pressurized MF system. The MF system consists of racks with membrane filters where the water is transmitted through the filters to further remove organic matter and particles. This process produces MF filtrate. The MF filtrate would be conveyed to the RO system, followed by UV/AOP and stabilization as described earlier for IPR treatment. The MF facility would be approximately 80,600 SF with a total height of 64 feet (21 feet below grade and 43 feet above grade). The MF filtrate also would be used to backwash the membrane filters. The backwash waste would be collected in backwash equalization basins and either be

Metropolitan Grace F. Napolitano Innovation Center – Membrane Filters

discharged to the ocean via the existing Warren Facility outfall system or sent back to the MBR process for additional treatment.

Clearwell and Pump Station

Following the treatment processes for IPR and DPR, chlorine would be injected into the purified water before being directed to a clearwell. The clearwell would consist of a structure where the purified water would be temporarily stored to achieve residual chlorine contact time, primarily for disinfection requirements, before being pumped out of the AWP Facility to the backbone pipeline. The clearwell would consist of an approximately 46,800-SF concrete structure extending to a depth of approximately 30 feet below grade. It would hold approximately 10 million gallons of water. A pump station consisting of six 3,500- to 4,000-horsepower (hp) pumps would be located adjacent to the clearwell and would pump purified water from the clearwell into the backbone pipeline for conveyance to its ultimate delivery points. The pump station is anticipated to be approximately 8,100 SF with a total height of 36 feet (20 feet below grade and 16 feet above grade).

Ancillary Facilities

A number of ancillary facilities would be necessary to support the water purification process and the overall Pure Water program, as described below.

Chemical Systems

Chemicals would be required for the water purification and stabilization processes, as well as for membrane cleaning. These chemicals would include phosphoric acid, supplemental carbon, sodium hypochlorite, liquid ammonium sulfate, anti-scalant, sulfuric acid, caustic, and citric acid. Storage of these chemicals would be located at different areas within the AWP Facility depending on use. Chemical storage facilities would be designed for 7 to 14 days of storage, depending on space limitations, and would be located under a canopy for weather protection. Storage tanks at the chemical storage facilities would be installed on slabs at grade with secondary containment sized to contain the largest volume of one tank.

Electrical Facilities

Power for the AWP Facility would be provided by Southern California Edison (SCE), which would construct two new 66-kilovolt (kV) transmission lines that would connect to two new substations located along the eastern side of the AWP Facility. The substations would consist of step-down transformers to convert the 66-kV class power supply to 12kV to 15 kV. Power from the substations would be distributed throughout the Joint Treatment Site using distribution switchyards, which would be located next to the substations, and electrical duct banks. The power supply from the distribution switchyards would run through electrical duct banks and connect to electrical buildings, which would house the switchgear, motor control centers, and power panels, among other electrical equipment. These electrical facilities would power various treatment processes, the pump station, and the electrical buildings. The Sanitation Districts' existing electrical infrastructure and renewable energy could also be used to power the sidestream centrate treatment.

In addition to the electrical facilities for the treatment processes, up to eight 4-megawatt (MW) diesel generators would be located next to the distribution switchyards to provide emergency backup power to critical equipment. Additionally, two 2-MW battery packs, which would draw power from onsite solar

panels, would be placed next to the emergency backup generators and would power site lighting and provide uninterrupted power supply for the AWP Facility's control system.

Solar panels also would be installed on rooftops of facilities with roofs or canopies, which are anticipated to include the parking and maintenance facilities =, warehouse, administration building, clearwell, ozone buildings, and electrical buildings. The solar panels are estimated to total approximately five acres in area and generate 1.5 MW of power.

Non-potable Water Facilities

Yard piping, consisting of new 8- to 12-inch diameter pipelines, would be installed to facilitate use of purified water for non-potable applications, such as industrial/treatment and irrigation uses.

Administration/Operations/Laboratory/Classrooms Facility

A new facility housing the administration, operations, laboratory, and classroom functions would serve as the central hub for day-to-day management and operations. The proposed facility would provide primary workspaces, support spaces, laboratory testing modules, and classrooms for the administration, operations, and laboratory staffing groups. The proposed facility is anticipated to consist of one or two 2-story buildings totaling approximately 51,000 SF.

Maintenance Facility

A new maintenance facility would provide dedicated workspace, support space, and shop space to perform maintenance and repair activities for the process controls and maintenance staffing groups. The proposed facility is anticipated to be a single story totaling approximately 21,600 SF.

Warehouse

A new warehouse would provide consolidated delivery and storage space for equipment, tools, and supplies. The space would primarily consist of an open room with aisles of industrial storage racks with maneuvering space for forklifts, scissor lifts, and cranes. The proposed warehouse is anticipated to be a single story totaling approximately 24,000 SF.

Parking Facilities and Electric Vehicle Charging Stations

Parking at the AWP Facility would be located onsite in several new parking facilities and would provide parking space for 150 to 200 vehicles. The parking facilities would include canopy covers, on top of which would be located solar photovoltaic systems. Electric vehicle (EV) charging stations would be installed under the canopies and would include approximately 100 level-2 (10 kilowatt [kW]/charger) and 15 level-3 (150 kW/charger) charging stations. Additional parking space would be available at other locations throughout the AWP Facility for staff access and would be assessed during the detailed design phase.

Visitor Center

A new visitor center would provide indoor and outdoor gathering spaces for a variety of purposes, including community and school groups. The proposed facility would include a flexible welcome center designed to accommodate a wide variety of uses and group sizes, making it adaptable for different purposes. This includes a reconfigurable layout that allows the center to support activities such as

school field trips, community meetings, conferences, and workshops, while also featuring multi-functional spaces for added versatility. The two-story, approximately 30,400 SF building would include a reception area, multi-media lobby, multipurpose room, and meeting room. The outdoor spaces would provide interactive, landscaped gardens for learning and a new integrated outdoor amphitheater would provide outdoor space for large groups.

4.2.1.3 Workforce Training Center

As part of Pure Water, a Workforce Training Center would be constructed and operated to provide space to support career development and hands-on training in a variety of skilled trades and technical fields. These could include comprehensive training for construction, water operations, and general trades certification needs. The proposed Workforce Training Center building is anticipated to be a single story totaling approximately 26,000 SF. It would consist of a lobby, offices, meeting spaces, classrooms, and workshops. Onsite parking needs, including designated EV parking spaces, would be assessed during the design phase. The Workforce Training Center would be located on the north side of Sepulveda Boulevard and would occupy approximately 2 acres within an approximately 10-acre area currently leased from the Sanitation Districts by International Plant Growers, a plant nursery business. Metropolitan would coordinate with the Sanitation Districts and International Plant Growers and situate the Workforce Training Center at a location that minimizes disruption to the nursery.

Proposed Workforce Training Center – Potential Training Opportunities

4.2.2 Backbone Conveyance System

The backbone conveyance system would consist of the backbone pipeline, associated pump stations, service connections, and other appurtenances to convey purified water from the AWP Facility in the City of Carson up to the existing San Gabriel Canyon Spreading Grounds in the City of Azusa (**Figures 4-4a** through **4-4c**). Recharge and non-potable water facilities that would connect to the backbone pipeline via service connections are discussed below in Sections 4.2.3 and 4.2.5, respectively.

4.2.2.1 Backbone Pipeline

The backbone pipeline would consist of a 7- to 9-foot diameter cement mortar-lined welded steel pipe that would extend approximately 39 miles through the cities of Carson, Long Beach, Lakewood, Cerritos, Bellflower, Norwalk, Downey, Santa Fe Springs, Pico Rivera, Whittier, Industry, Baldwin Park, Irwindale, Duarte, and Azusa, as well as unincorporated portions of Los Angeles County. Due to its length, the backbone pipeline has been divided into eight reaches to facilitate design and construction of Pure

Water (**Figure 2-3**). The pipeline would be buried via open trench or tunnel construction methods[3] under public roadways and in properties situated along the San Gabriel River that currently are held or owned by SCE, LADWP, Los Angeles County Flood Control District (LACFCD), U.S. Army Corps of Engineers (USACE), and private parties.

Purified water would be pumped into the backbone pipeline via the pump station located at the AWP Facility. From this pump station, the pipeline would extend north along Main Street, east along Sepulveda Boulevard, north along Alameda Street, east along Del Amo Boulevard, north along Paramount Boulevard, east along South Street, north along Palo Verde Avenue, and then generally follow the San Gabriel River to the San Gabriel Canyon Spreading Grounds. Land uses along the backbone alignment include residential uses, industrial uses, commercial uses, business park uses, medical facilities, schools, parks and other recreational facilities (e.g., the San Gabriel River Trail), the San Gabriel River channel, groundwater recharge basins and flood control facilities, agricultural uses (e.g., nurseries), extractive (i.e., mining) uses, railroad right-of-way (ROW), and roadway/freeway ROW.

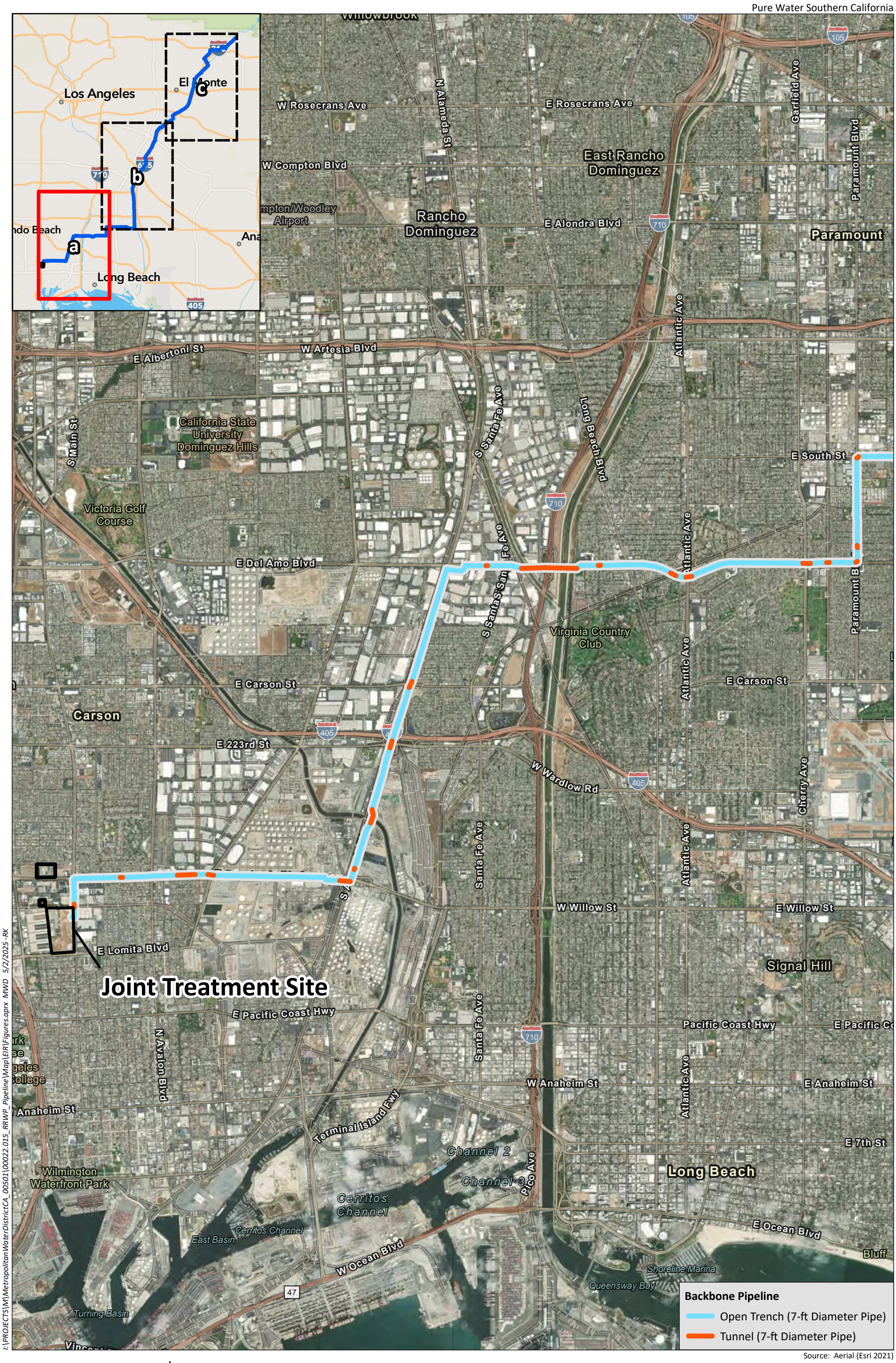
The southern approximately 25 miles of the backbone pipeline would be 7 feet in diameter (with the capacity to convey approximately 150 MGD), while the northern approximately 14 miles would be up to 9 feet in diameter (with the capacity to convey up to approximately 300 MGD) to accommodate potential future regional integration of water delivery systems as discussed earlier in Chapter 2, *Project Overview and Background* (**Figures 4-4a** through **4-4c**). If future conditions appear to warrant integration, appropriate environmental review would be undertaken for associated modifications to the backbone pipeline at that time.

Appurtenant facilities along the backbone pipeline would include air release/vacuum valves, isolation valves, meters, pump wells, blow-off structures, access ways (e.g., maintenance holes), fiber optic duct banks and associated vaults, cathodic protection, and other necessary appurtenances. Air release/vacuum valves allow air into or out of the pipeline during dewatering or filling of pipe to control air pressure in the pipe. These facilities are typically located in above-ground enclosures that are less than five feet tall and five feet wide. Isolation valves regulate flow to a particular area and are typically located in below-ground vaults and are less than 40 feet deep and 35 feet wide. Meters typically are used to monitor and control water usage in a pipeline and are located at the pump stations or in below-ground vaults. The vaults are typically less than 40 feet deep and 25 feet wide. Pump wells and blow-off structures are used to dewater the pipeline into natural waterways, sewers, and storm drains when a shutdown of the pipeline is necessary and can provide access points for routine maintenance or pipeline inspection. Fiber optic duct bank(s) also would be installed either within the main pipe trench or alongside the pipeline to provide network communications for instrumentation monitoring, control, security, and potentially leak detection. Most of these facilities are typically located within buried equipment vaults and would not be visible or accessible to the public. Access ways typically provide access for maintenance, inspections, and repairs and are spaced at regular intervals along the pipeline.

4.2.2.2 Pump Stations

Three new pump stations would pump the purified water through the backbone pipeline from the AWP Facility in the City of Carson to the San Gabriel Canyon Spreading Grounds in the City of Azusa. The first pump station is part of the AWP Facility and is discussed in Section 4.1.2. The second (Whittier Narrows Pump Station) and third (Santa Fe Pump Station) are part of the backbone conveyance system and

[3] Pipeline construction methods are described in more detail in Section 4.3.2.1.



Source: Aerial (Esri 2021)

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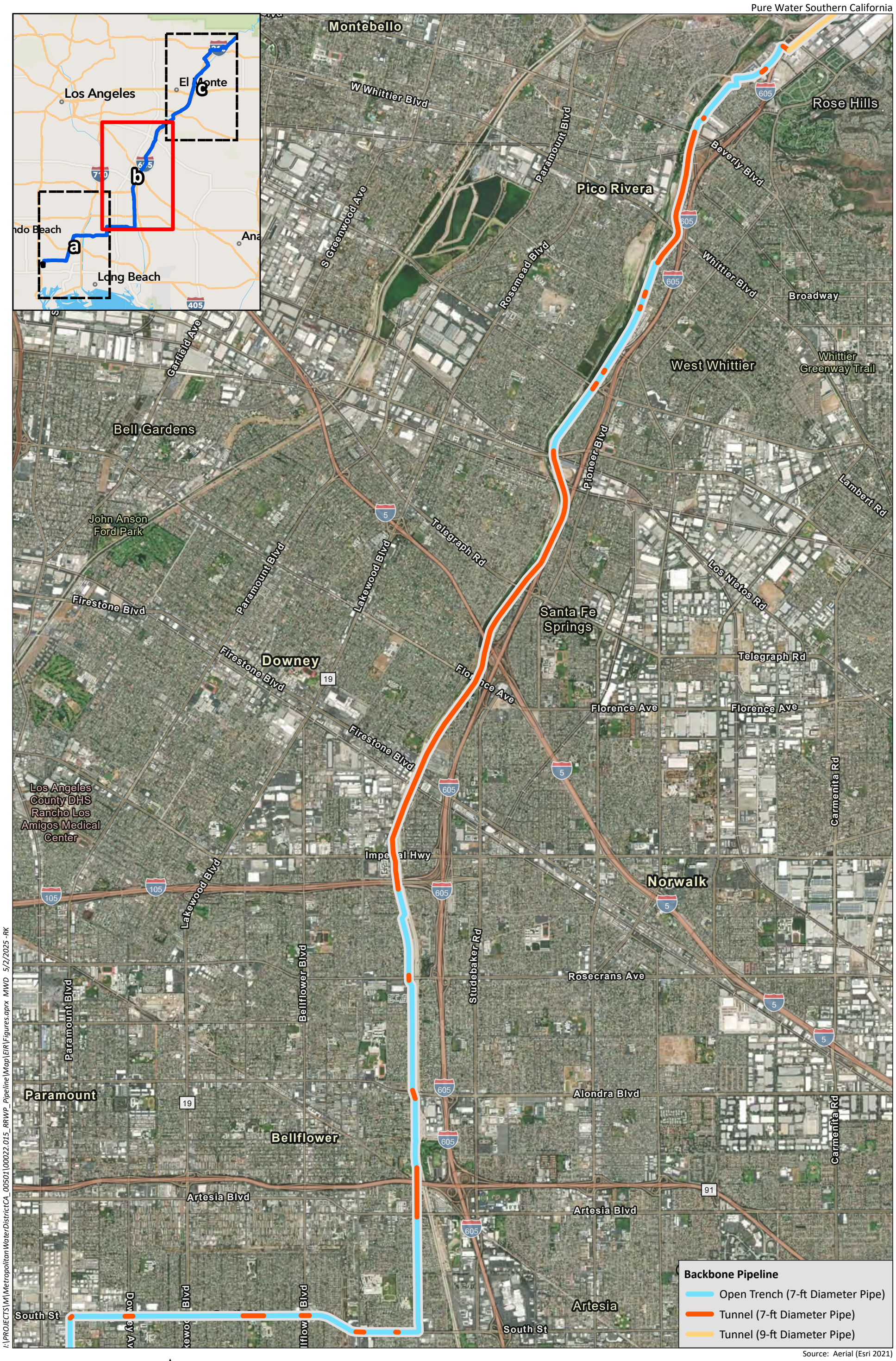
PURE WATER SOUTHERN CALIFORNIA

Backbone Pipeline

Figure 4-4a



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Source: Aerial (Esri 2021)

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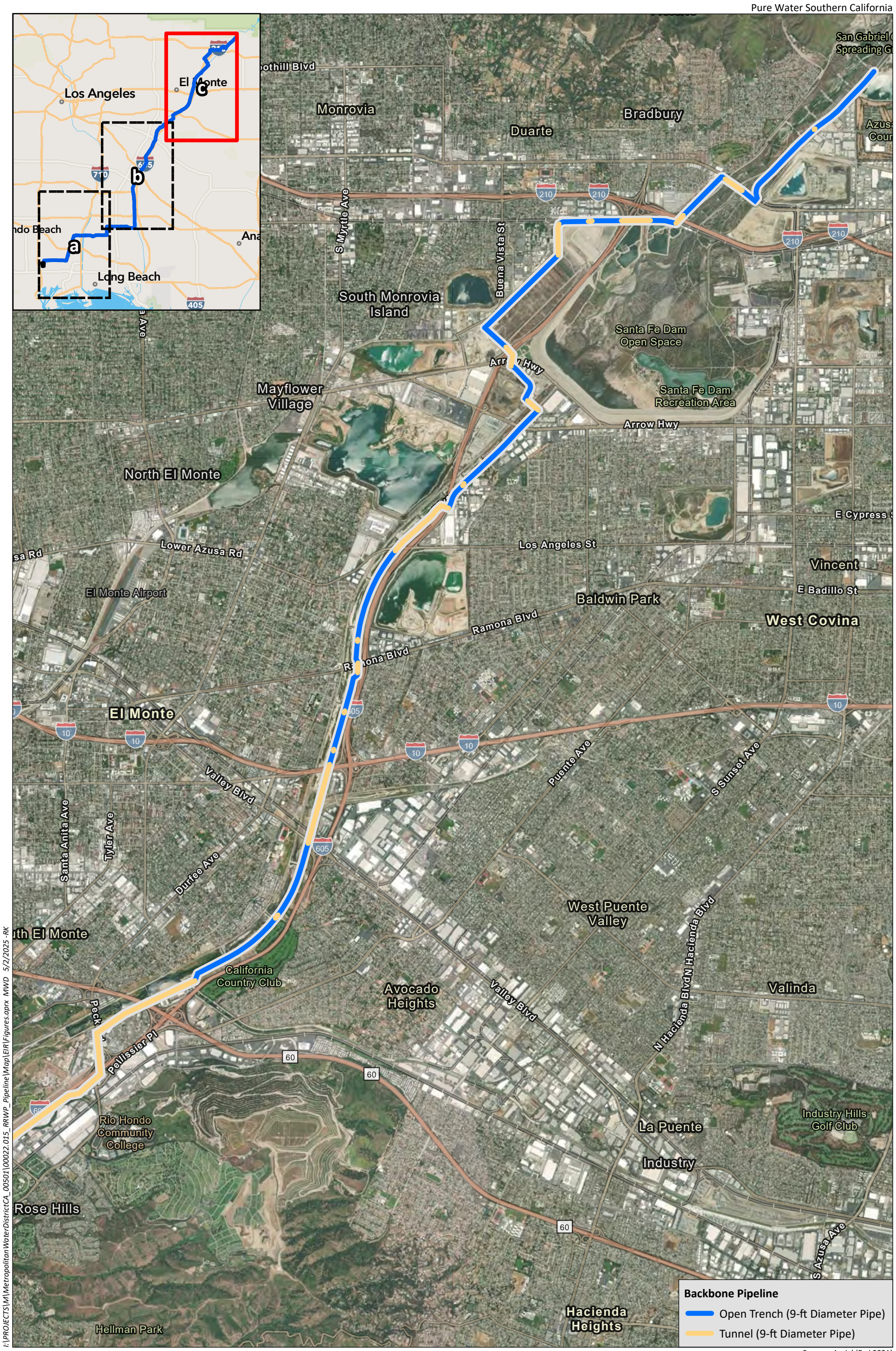
PUREWATER SOUTHERN CALIFORNIA

Backbone Pipeline

Figure 4-4b



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Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Backbone Pipeline

Figure 4-4c

described below. As with the AWP Facility pump station, the Whittier Narrows and Santa Fe pump stations would have backup power, which could include a dual feed from the appropriate electricity purveyor or emergency diesel generators.

Although the specific site of the Whittier Narrows Pump Station would be identified during design, its general location would be near Whittier Narrows and would be located in the City of Whittier, City of Industry, City of Pico Rivera, or unincorporated Los Angeles County. The Whittier Narrows Pump Station would have a capacity of 150 MGD and would pump purified water to the Santa Fe Pump Station.

The specific site of the Santa Fe Pump Station also would be identified during design. The pump station would be near the Santa Fe Spreading Grounds and would be located in the City of Irwindale, City of Baldwin Park, City of Duarte, or City of Azusa. The Santa Fe Pump Station is anticipated to have two pump sets (A and B) and a total capacity of approximately 100 MGD, subject to final location of the proposed pump station. Set A, with a capacity of approximately 40 MGD, would pump purified water north to the San Gabriel Canyon Spreading Grounds and Set B, with a capacity of approximately 60 MGD, would pump purified water east to the Weymouth WTP.

Although the sites for these two pump stations have not yet been identified, they would be located as close as possible to the backbone pipeline. Based on conceptual-level design, each pump station is expected to be located on an approximately 5- to 11-acre site and would include a main pump area consisting of a building that would house the pumps and motors; an electrical room; surge tanks and air compressors; an administrative area; above-grade surge tanks to regulate flow to the pumps; clearwell tanks; a dechlorination facility that would remove chlorine from potential overflow before discharging offsite; valve and meter vaults; a potential emergency backup generator for temporary power; and a minimum 6-foot-high wall or perimeter security fence. An electrical substation is anticipated to be required for each pump station and would be located on an approximately 1-acre site either at the same location as the pump station or at a nearby offsite location. Each substation would have electrical transformers, power poles and overhead powerlines, and a minimum 6-foot-high wall or perimeter security fence surrounding the substation.

The need for additional pump stations and flow control structures along the backbone pipeline would depend on further hydraulic evaluation of the backbone conveyance system, final pump station locations, and final selection of the DPR pipeline alignment. If additional facilities are required, they would be analyzed for potential environmental impacts at the appropriate time.

4.2.2.3 Service Connections

The backbone pipeline would deliver purified water for various uses along the pipeline alignment, including IPR, DPR, and non-potable applications. Metropolitan would provide metered service connections at various locations along the backbone pipeline to enable agencies to obtain water for these uses. Service connections for this purpose generally consist of smaller-diameter lateral pipelines connecting to the backbone pipeline. These lateral pipelines would have a below-grade isolation valve vault followed by a separate flow meter vault. Downstream of the meter vault, additional lateral pipelines would connect the meters to new or existing facilities, which would be developed, constructed, and managed by the agencies to receive water. Details regarding the location, size, and length of these lateral pipelines are unknown at this time. Once more detailed information is known regarding these facilities, additional environmental review would be conducted to assess potential impacts.

4.2.3 Recharge Facilities

Los Angeles County Department of Public Works – Rio Hondo Spreading Grounds

Purified water would be used to recharge groundwater basins via existing and proposed spreading facilities and injection wells. Spreading facilities include large basins that are designed to hold water while it percolates into the underlying groundwater basin while injection wells are wells that typically deliver water directly into the groundwater basin. The groundwater basins that would receive the purified water include the West Coast Basin, Central Basin, and Main San Gabriel Basin (**Figure 2-1**). Pure Water would discharge into existing spreading facilities within these basins, including the Rio Hondo, San Gabriel Coastal, Santa Fe, and San Gabriel Canyon spreading grounds and via existing injection wells in the West Coast Basin. Additional new recharge facilities also are proposed, and details such as type of facility (spreading facility or injection well), size, number, and location are in the conceptual planning phase. All recharge facilities, either existing or proposed, would require a new connection to the backbone pipeline. Additional environmental review would be conducted to assess potential impacts associated with the use of existing facilities and installation of new facilities once more detailed information is known.

Groundwater replenishment in the Main San Gabriel and Central basins provided by Pure Water would substantially replace the need for imported water for groundwater recharge in these basins. As a result, Metropolitan anticipates reducing or suspending deliveries at three service connections where imported water currently is provided for groundwater replenishment in these basins. The three service connections are CENB-48, PM-26, and USG-3 (**Figure 4-5**). Service connection CENB-48 discharges into the Central Basin and is discussed in more detail in Section 4.2.3.2. Service connections PM-26 and USG-3 discharge into the Main San Gabriel Basin and are discussed in more detail in Section 4.2.3.3. Although information regarding average imported water deliveries to these basins is provided below, current water deliveries at these locations are not completed on a regular schedule, the frequency and quantity of deliveries vary each year, and there have been years when no water deliveries were completed. Once more detailed information is known regarding potential changes in deliveries at these service connections, additional environmental review would be conducted.

4.2.3.1 West Coast Basin

The West Coast Basin is located in the southwestern part of the Los Angeles Coastal Plain, underlying the service areas of the following Metropolitan member agencies: West Basin MWD, City of Los Angeles, City of Torrance, and City of Long Beach. Existing recharge facilities within the basin include two seawater intrusion barriers, the West Coast Basin Barrier in the cities of Manhattan Beach and Hermosa

Source: Base Map Layer (Esri)

PUREWATER SOUTHERN CALIFORNIA

Reduced Imported Water Discharge Locations

Figure 4-5

Beach, and the Dominguez Gap Barrier along the Dominguez Channel in the cities of Wilmington and Carson. Pure Water would recharge up to 9,000 AFY into the West Coast Basin via up to 14 new injection wells proposed by the Water Replenishment District (WRD) that would be located in the City of Carson (**Figure 2-1**), and would serve all of the existing and potential future demands for the West Basin MWD's recycled water needs.

4.2.3.2 Central Basin

The Central Basin is located in the central part of the Los Angeles Coastal Plain, underlying the service areas of the following Metropolitan member agencies: Central Basin MWD, West Basin MWD, City of Compton, City of Los Angeles, and City of Long Beach. Natural replenishment of groundwater in the Central Basin occurs largely from surface flow and underflow of the San Gabriel River in the Whitter Narrows area, as well as from rainfall. Intentional replenishment of groundwater is accomplished by capturing and spreading water at the Rio Hondo Spreading Grounds and San Gabriel Coastal Spreading Grounds in the City of Pico Rivera (**Figure 2-1**). Both are owned and operated by the Los Angeles County Department of Public Works (LACPW) and accommodate stormwater runoff, urban runoff, imported water purchased from Metropolitan (discussed further below), and recycled water purchased from the Sanitation Districts. Recharge in the Central Basin from imported and recycled water also occurs in association with the Alamitos Gap Seawater Barrier Project, which comprises 43 injection wells located near the Los Angeles-Orange County line about two miles inland from the mouth of the San Gabriel River. Pure Water would recharge approximately 9,000 AFY into the Central Basin via 4 new aquifer storage and recovery wells proposed by the City of Long Beach and via existing spreading basins at the Rio Hondo and San Gabriel Coastal spreading grounds.

Service Connection CENB-48

Metropolitan currently provides groundwater recharge from imported water into the Central Basin via service connection CENB-48. The discharge point is located adjacent to the San Dimas Wash, southwest of the San Dimas Canyon Spreading Grounds in the City of San Dimas. From this location, the discharged water extends to the San Gabriel Coastal and Rio Hondo Spreading Grounds to ultimately recharge the basin. Over the past 25 years, an average of approximately 9,800 AFY of imported water has been released by Metropolitan from CENB-48 into the San Dimas Wash. As discussed earlier, Metropolitan anticipates reducing or suspending these releases and replacing them, either fully or partially, with purified water via aquifer storage and recovery wells and injection wells.

4.2.3.3 Main San Gabriel Basin

The Main San Gabriel Basin is located in the eastern part of Los Angeles County, underlying the service areas of the following Metropolitan member agencies: Upper San Gabriel MWD, Three Valleys MWD, and City of San Marino. Natural replenishment of groundwater in the Main San Gabriel Basin occurs largely from rainfall and runoff from the San Gabriel Mountains, which are located immediately to the north. Intentional replenishment of groundwater is accomplished by capturing and spreading water at 17 spreading basins, 16 of which are owned and operated by LACPW and 1 of which is owned and operated by the California-American Water Company. The Santa Fe Spreading Grounds and San Gabriel Canyon Spreading Grounds are two of the largest spreading basins in the Main San Gabriel Basin (**Figure 2-1**). Both are owned and operated by LACPW and accommodate stormwater runoff, urban runoff, and imported water purchased from Metropolitan. Pure Water would recharge approximately 57,000 AFY into the Main San Gabriel Basin via the existing spreading basins at the Santa Fe Spreading

Grounds and San Gabriel Canyon Spreading Grounds, as well potential new spreading facilities or injection wells.

Service Connection PM-26

Metropolitan currently provides groundwater recharge from imported water into the Main San Gabriel Basin via service connection PM-26. The discharge point is located in the City of Glendora at the northeastern end of the Little Dalton Spreading Grounds, which directly recharges the basin. Over the past 25 years, an average of approximately 1,100 AFY of imported water has been released by Metropolitan from service connection PM-26 into the Little Dalton Spreading Grounds. As discussed earlier, Metropolitan anticipates reducing or suspending these releases and replacing them, either fully or partially, with purified water via spreading basins.

Service Connection USG-3

Metropolitan also provides groundwater recharge from imported water into the Main San Gabriel Basin via service connection USG-3. The discharge point is located along the San Gabriel River, south of Morris Reservoir and north of the City of Azusa in the unincorporated portion of Los Angeles County. Over the past 25 years, an average of approximately 30,000 AFY of imported water has been released by Metropolitan from service connection USG-3 into the San Gabriel River. Metropolitan anticipates reducing or suspending these releases and replacing them, either fully or partially, with purified water via spreading basins as described above.

4.2.4 DPR Facilities

As discussed earlier in Section 4.1.1, Phase 1 would include DPR treatment facilities at the Weymouth WTP. These facilities and the associated conveyance system are described in more detail below. Phase 2 would include DPR treatment facilities at either the AWP Facility, the Weymouth WTP, or a satellite location. For purposes of this EIR, Phase 2 DPR treatment was analyzed at the AWP Facility, which is described earlier as part of the Joint Treatment Site discussion in Section 4.2.1. However, if Phase 2 DPR occurs at the Weymouth WTP, additional facilities would be required, and construction and operation of these facilities would undergo subsequent environmental review. These facilities are described below in Section 4.2.4.2. If DPR treatment occurs at a satellite location, DPR treatment facilities similar to those at the Weymouth WTP would be developed and subsequent environmental review would be required. As such, potential DPR treatment at a satellite location is not discussed further in this section.

4.2.4.1 DPR Facilities – Phase 1

Weymouth WTP

Phase 1 DPR treatment facilities would be developed at the Weymouth WTP to further treat 25 MGD of purified water for DPR purposes. The facilities would be located on the southern portion of the Weymouth WTP site (**Figure 4-6**) and would consist of a UV reactor building (including workspace and control room), disinfection facilities, a treated water storage tank, and pumps. The DPR-quality water would be introduced into the drinking water supply system by blending with other water supply sources or directing it to the headworks of the Weymouth WTP for additional treatment through conventional drinking water treatment processes.

Azusa Pipeline and Pump Stations

To convey the purified water from the backbone pipeline to the Weymouth WTP, Metropolitan would utilize the existing 30-inch diameter Azusa Pipeline. The Azusa Pipeline is owned and operated by the San Gabriel Valley MWD and currently conveys SWP water from the Devil Canyon Afterbay in the San Bernardino Mountains west for approximately 38 miles to the San Gabriel Canyon Spreading Grounds. With implementation of Pure Water and its delivery of purified water to the San Gabriel Canyon Spreading Grounds, imported water from the SWP via the Devil Canyon Afterbay would no longer be required, thus allowing the Azusa Pipeline to be available for use.

Approximately 25 MGD of purified water from the AWP Facility would be conveyed via the backbone pipeline to the Azusa Pipeline to its ultimate DPR treatment location at the Weymouth WTP. To accomplish this, the Azusa Pipeline would be retrofitted and two new 30-inch-diameter pipelines, each approximately 1.4 miles long, would be constructed to connect the Azusa Pipeline to the backbone pipeline and to the Weymouth WTP (**Figure 4-7**).

Two new pump stations would be required to pump the purified water from the backbone pipeline to the Weymouth WTP. It is anticipated that one pump station would be located adjacent to the northern portion of the backbone pipeline and the second would be located in the City of Glendora. Each pump station is expected to be located on an approximately 3-acre site and would contain facilities and components similar to those described for the backbone conveyance pump stations, but at a smaller scale.

4.2.4.2 DPR Facilities – Phase 2

Phase 2 DPR treatment facilities could be located at the Joint Treatment Site, the Weymouth WTP, or a satellite location. As discussed earlier, only Phase 2 DPR treatment at the Weymouth WTP is described below. These Phase 2 DPR treatment facilities could include a combination of various treatment processes such as ozonation, BAC, UV, and/or MF, as described earlier in Section 4.2.1.2. The treatment facilities would be developed to further treat 60 MGD of purified water for DPR purposes. The facilities also would be located on the southern portion of the Weymouth WTP site (**Figure 4-6**) and could consist of water treatment and disinfection, facilities, a workspace and control room, a treated water storage tank, and a pump station. As with Phase 1 DPR treatment, the Phase 2 DPR-quality water would be introduced into the drinking water supply system by blending with other water supply sources or directing it to the headworks of the Weymouth WTP for additional treatment through conventional drinking water treatment processes.

DPR Pipeline and Pump Station

Regardless of the ultimate Phase 2 DPR treatment location, up to 60 MGD of purified water would be conveyed to the Weymouth WTP for integration into Metropolitan's system. To convey this water, a new 54-inch-diameter pipeline, called the DPR pipeline, would be constructed between the northern portion of the backbone pipeline and the Weymouth WTP[4]. A conceptual alignment was identified and

[4] The capacity of the existing Azusa Pipeline is 25 MGD, which would not be sufficient to convey the 60 MGD planned for DPR use in Phase 2. The Azusa Pipeline could remain operational in Phase 2 to provide redundancy, or the new DPR pipeline could be constructed to convey a smaller amount of water (approximately 35 MGD), with the Azusa Pipeline continuing to convey 25 MGD. The analysis in this EIR conservatively assumes that the DPR pipeline would be sized to convey the full 60 MGD.

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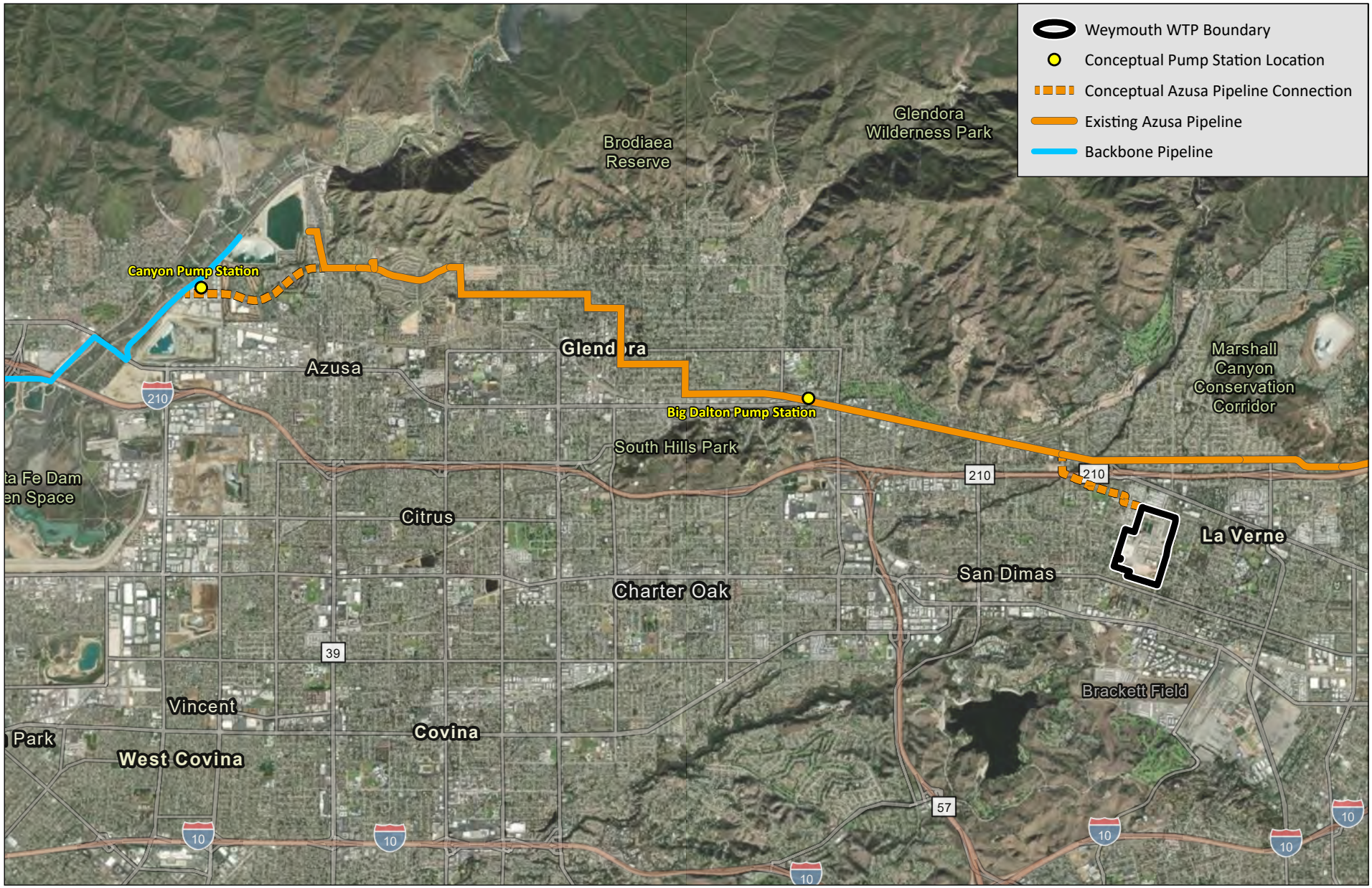
Source: Base Map Layers (ESRI, 2013)

PURE WATER SOUTHERN CALIFORNIA

Phase 1 DPR Treatment Site

Figure 4-6



Source: Base Map Layer (Esri)

0 6,500 Feet

PUREWATER SOUTHERN CALIFORNIA

Azusa Pipeline Retrofit Alignment

Figure 4-7

is anticipated to route south along Irwindale Avenue, east along Arrow Highway, and north along Wheeler Avenue in the cities of Azusa, Irwindale, Covina, Glendora, San Dimas, and La Verne (**Figure 4-8**). An additional pump station also would be required along the DPR pipeline and is expected to be located along Arrow Highway in the City of San Dimas. The pump station would contain facilities and components similar to those described for the backbone conveyance pump stations, but at a smaller scale. The exact location of the pipeline and pump station would be determined at a later time and would require subsequent environmental review.

4.2.5 Non-potable Water Facilities

Approximately 25 MGD of purified water would be used by water agencies, including West Basin MWD and LADWP, for non-potable end uses as described below. These water agencies would connect to the backbone pipeline via service connections provided by Metropolitan at key locations along the alignment. While Metropolitan would install the service connections, the water agencies would be responsible for facilities to connect these service connections to their systems.

Part of West Basin MWD's distribution system, referred to as the South System, extends approximately one mile from the proposed backbone pipeline. To facilitate a connection between the backbone pipeline and the South System, a new service connection would be constructed in the vicinity of the intersection of Alameda Street and Del Amo Boulevard in the City of Carson. The new service connection would use purified water to service existing non-potable demands in West Basin MWD's service area.

Part of LADWP's distribution system, referred to as the Harbor Loop System, extends approximately 0.7 mile from the proposed backbone pipeline. To facilitate a connection between the backbone pipeline and the Harbor Loop System, a new service connection would be constructed in the vicinity of the intersection of Sepulveda Boulevard and Avalon Boulevard in the City of Carson. The purified water would be used to supplement existing non-potable supplies within the Harbor Loop System.

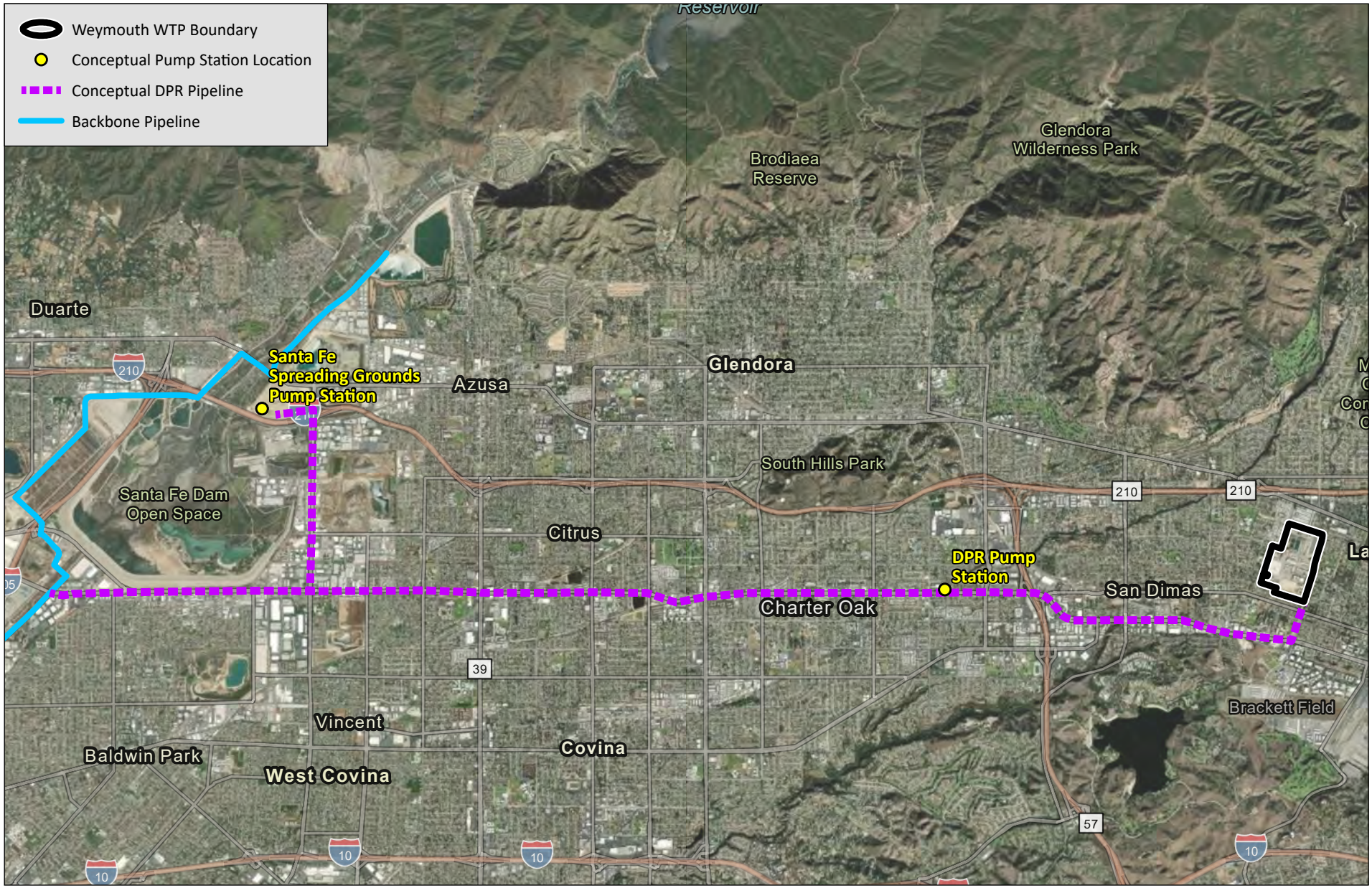
In addition to non-potable uses by these agencies, purified water would also be used as utility and irrigation water at the Warren Facility and AWP Facility, as well as other potential nearby uses. Refer to Section 4.2.1.1 for a description of these facilities. Offsite users in the nearby area that would receive purified water for irrigation purposes are expected to include the Wilmington Athletic Complex, Carriage Crest Park, and Sanitation Districts-owned land on the north side of Sepulveda Boulevard. The offsite distribution system would consist of 4- to 8-inch diameter pipelines that would be located within public roadways and on Sanitation Districts-owned property.

Service connections and associated facilities for non-potable water uses are in the conceptual planning phase and would require additional environmental review once more details are known.

4.2.6 Sanitation Districts Support Facilities

While the site where the AWP Facility would be located is mostly vacant, there are several existing Sanitation Districts support facilities within its footprint that would be demolished and rebuilt elsewhere within the Warren Facility. These support facilities include a warehouse with outdoor storage space; an outdoor grit, screenings, and sewer cleanings handling area (pit); and a Secondary Treatment Area Research Facility.

The new proposed warehouse would be approximately 18,000 SF with dedicated space for offices, a loading dock, and an additional 25,000 SF of outdoor storage. This would provide adequate spacing for



Source: Base Map Layer (Esri)

PURE WATER SOUTHERN CALIFORNIA

Conceptual Phase 2 DPR Pipeline Alignment

Figure 4-8

not only existing supplies and equipment but also for storing materials needed to support operation of the odor control facility and MBR associated with Pure Water's treatment process. These materials include new odor control fans, rotating equipment, and pumps. The proposed grit, screenings, and sewer cleanings handling station would replace the existing pit and would be an indoor two-level facility with a ground-level offloading area, a below-grade level containing dewatering containers, truck ramps, and a pump station. The proposed grit, screenings, and sewer cleanings handling station would also be equipped with odor control measures such as a foul air recovery system and treatment station and would have air curtains at roll-up doors to keep odors inside the station. The Secondary Treatment Area Research Facility is used to conduct bench-scale and pilot-scale testing of various technologies, such as MBR, to evaluate new technologies and optimize operation of the secondary treatment process. The research area consists of various structures and containers to house equipment, instruments, chemicals, and tools, as well as workspaces and offices. The proposed research facility would include similar features as those in the existing Secondary Treatment Area Research Facility.

All the new Sanitation Districts support facilities would be located in vacant or underutilized areas in the northeastern portion of the Warren Facility. These facilities are in the early planning stage and would require additional environmental review once more details are known.

4.3 CONSTRUCTION AND OPERATION

4.3.1 Joint Treatment Site

As described earlier, the Joint Treatment Site would consist of the Warren Facility improvements, AWP Facility, and the Workforce Training Center. Construction and operational activities associated with these facilities are discussed below.

4.3.1.1 Construction

Because construction activities at the Joint Treatment Site would vary over Phase 1 and Phase 2, description of these activities is presented by phase. On average, construction activities are anticipated to employ approximately 250 to 300 workers per day for Phase 1, and approximately 150 to 200 workers per day for Phase 2.

Phase 1

Oil Well Plugging and Abandonment

The portion of the Joint Treatment Site where the AWP Facility would be constructed includes eight existing oil wells varying in depth from 3,300 to 3,900 feet. Of these wells, six are plugged and two are idle.[5] The two idle wells would be plugged and abandoned prior to the start of construction at this location. Plugging and abandoning the wells would entail excavating around each well to expose the top of the well casing, cutting the casing to approximately 5 to 10 feet below the surface, and filling the casing with cement or bentonite, as specified by the City of Carson and the California Department of Conservation's Geologic Energy Management Division (CalGEM). The six wells that are already plugged

[5] In California, an idle well is a well that has not been used for two years or more and has not yet been properly plugged and abandoned. The two idle wells at the AWP Facility site are each comprised solely of the subsurface well casing, which is capped within 5 feet of the ground surface. There are no above-ground features, such as pumps or derricks.

would be inspected for leaks and would be re-plugged to current standards if any leaks are detected. Additionally, the well casings of all eight wells may have to be cut and re-plugged at a lower depth if treatment facilities with deep foundations are constructed over them. For these wells, a ventilation system would be installed on top of each well casing to allow for monitoring. All necessary permits and approvals would be obtained from the City of Carson and CalGEM prior to start of the work.

Demolition, Clearing and Grubbing, and Utility and Facility Relocation

Demolition of existing structures and pavement, clearing and grubbing of ground cover, and relocation of existing utilities and facilities would be required at the Joint Treatment Site prior to grading and excavation. Demolition would include the Sanitation Districts' existing warehouse building with outdoor storage space, an outdoor grit, screenings, and sewer cleanings handling area, a Secondary Treatment Area Research Facility, stormwater facilities, and pavement. The site would then be cleared by removing vegetation and surface debris and grubbed to remove roots and underground systems in the soil. The existing infrastructure that currently is remediating the soil greater than 30 feet below ground surface and groundwater (as described in Section 4.2.1) would be protected in place to the extent feasible and removed only after the Los Angeles Regional Board issues a "No Further Action" letter for cleanup of the deep soil and groundwater. Other utilities requiring relocation would be relocated to their new locations onsite at the Joint Treatment Site. If unidentified subsurface structures or utilities are encountered, they would be removed and relocated, as appropriate. The Sanitation Districts support facilities would be relocated elsewhere within the Warren Facility.

Mass Excavation and Contaminated Soil Removal

Preparation of the Joint Treatment Site for construction of Pure Water facilities includes excavating, filling, and grading the site. Most of the mass excavation for the ultimate buildout of the Joint Treatment Site is expected to occur during this phase. The soil would be balanced onsite to the extent feasible to minimize import and export of material. Approximately 552,000 cubic yards of soil would be excavated during this phase. Approximately 110,000 cubic yards of this amount would be hauled offsite to a landfill, and the remaining 442,000 cubic yards would be used as fill to regrade the site. Due to the history of the site as an oil refinery, a portion of the excavated soil may be contaminated to the extent that it would need to be hauled offsite and disposed of in compliance with applicable regulatory requirements. Refer to Section 5.7, *Hazards and Hazardous Materials*, for an analysis of potential environmental impacts associated with this material.

Structural Excavation and Foundation Preparation

Following mass excavation at the Joint Treatment Site, additional structural excavation would be required to prepare the site for foundations required for all buildings, treatment processes, and electrical facilities. In comparison to mass excavation, structural excavation is more precise and localized. The volume of structural excavation material in Phase 1 would be approximately 99,000 cubic yards, which would be balanced onsite.

Yard Piping Installation

Prior to the development of above-grade structures at the Joint Treatment Site, below-grade piping, including major treatment process piping, flow diversion piping, electrical duct banks, and other utility piping (e.g., for drinking and non-potable water uses), would be installed. This would involve digging

trenches, placing and connecting piping, and backfilling the trenches. During this phase, it is anticipated that yard piping for the full 150 MGD IPR treatment facilities would be installed.

Above-grade Facility Construction and Equipment Installation

The majority of above-grade facilities at the Joint Treatment Site would be constructed during Phase 1 (**Figure 4-2**). This would entail installing concrete structures, structural steel, process equipment, above-grade process piping, electrical equipment, instrumentation, utilities, and roofing and exterior cladding. Facility structures would be constructed to their ultimate buildout size, but only equipment required for Phase 1 would be installed.

Paving and Ground Cover

Upon completion of construction of above-grade facilities, the remaining site areas, including areas for vehicular and pedestrian access and parking lots, would be paved with asphalt or concrete, while other areas would be landscaped or hardscaped. Paved areas would total approximately 460,000 SF while landscaped and hardscaped areas would total approximately 43,000 SF.

Storm Drain Relocation

Construction of DPR treatment facilities at the Joint Treatment Site would require relocation of approximately 1,200 feet of the existing Panama Avenue Drain, a 10-foot by 12-foot reinforced concrete box storm drain owned and maintained by LACPW. Currently, the Panama Avenue Drain runs through the southern part of the AWP Facility site where several DPR treatment process facilities would be located. To accommodate these facilities, the storm drain would be relocated to the eastern (Main Street) and southern (Lomita Boulevard) edges of the Joint Treatment Site. Relocation is planned to occur toward the second half of Phase 1 construction, after which the Phase 2 facilities would be constructed.

Phase 2

Structural Excavation and Foundation Preparation

Additional structural excavation would be required in Phase 2 to prepare the site for additional structure foundations, primarily associated with DPR facilities. The volume of structural excavation in Phase 2 would be approximately 154,000 cubic yards. As indicated earlier, it is anticipated that a portion of the excavated soil (approximately 31,000 cubic yards) may be contaminated to the extent that it would need to be hauled offsite and disposed of in compliance with applicable regulatory requirements. Refer to Section 5.7 for an analysis of potential environmental impacts associated with this material. Approximately 43,000 cubic yards would be used as structural backfill with the remainder (approximately 80,000 cubic yards) to be hauled offsite for disposal.

Yard Piping Installation

Additional below-grade yard piping would be required in Phase 2, primarily for DPR treatment facilities. Yard piping would include treatment process piping, flow diversion piping, and electrical duct banks. This work would involve digging trenches, placing and connecting piping, and backfilling the trenches.

Above-grade Facility Construction and Equipment Installation

Additional above-grade facilities at the Joint Treatment Site, including expanded bioreactor and membrane tanks and DPR facilities, would be constructed during Phase 2 (**Figure 4-2**). This would entail installing concrete structures, structural steel, process equipment, above-grade process piping, utilities, and roofing and exterior cladding.

Paving and Ground Cover

Asphalt and concrete paving required as part of Phase 2 construction would total approximately 58,000 SF. Areas not utilized for vehicular or pedestrian access or parking would be landscaped or hardscaped. Landscaping could involve tree plantings, installation of California-friendly gardens, and/or drought-tolerant groundcover. Hardscaping could include permeable and/or recycled materials.

4.3.1.2 Operation

Operation of the Joint Treatment Site would be phased as processes associated with Phases 1 and 2 come online. Operational activities for both phases would include administrative services; inspections; maintenance of facilities, structures, and equipment; operation of treatment, pumping, and electrical facilities and equipment; storage of materials and equipment; delivery, storage, and management of treatment chemicals; monitoring of water quality; and management of residual wastes. Most administrative services, inspections, maintenance activities, and deliveries would occur during regular working hours. Treatment processes, water quality monitoring, pumping, and management of residual wastes would occur continuously throughout the day and night, as needed.

To operate the fully built-out Joint Treatment Site (i.e., Phases 1 and 2), approximately 194 staff would be required, which would consist of administrative staff, maintenance staff, operations staff, chemists, and public outreach staff. In addition to operational staff, the visitor center at the AWP Facility is anticipated to receive up to 40 (with an average of 10) visitors per day, consisting mainly of community and school groups, and the Workforce Training Center is anticipated to serve approximately 31 trainees per day. Additional visits to the Joint Treatment Site would include an average of up to 31 chemical deliveries per day via truck.

The Workforce Training Center would provide space to support career development and hands-on training in a variety of skilled trades and technical fields. These could include comprehensive training for construction, water operations, and general trades certification needs. Operational activities associated with the Workforce Training Center would include administrative services, training, inspection, maintenance, and deliveries of materials and equipment for training.

Pure Water would implement various safeguards to ensure proper operation and protection of water quality. Prior to entering the purification process at the AWP Facility, the cleaned wastewater from the Warren Facility would be monitored for water quality as part of the Sanitation Districts' source control program. In addition to 24-hour staffing of the Warren Facility and AWP Facility, all treatment process components would have a fully automated control system with a programmable logic controller that monitors and operates the respective treatment process based on flows, pressures, levels, and water quality parameters. The system would monitor and alert operators of abnormal conditions with alarms and notifications. In addition, in the event of operational need, the AWP Facility could divert flows to Warren Facility's headworks or the outfall, or stop receiving flows from the Warren Facility. Although

the AWP Facility would have built-in operational features that minimize redundancy needs, critical facilities and components would have redundant capacity.

In addition to the safeguards described above, Metropolitan would develop an online monitoring and response plan, utilizing Supervisory Control and Data Acquisition (SCADA) systems, to provide sufficient features and assurances that any foreseeable malfunction could be promptly identified and appropriate responses taken. Critical control points as well as parameters for alert limits and corrective actions would be identified. The AWP Facility would include water quality and process monitoring instruments to monitor various parameters and ensure that each system is operating correctly. If a malfunction occurs at the AWP Facility that results in off-specification water flowing into the clearwell, the clearwell would divert the water to the Warren Facility's outfall structure instead of being pumped to the backbone pipeline.

Finally, critical facilities and components of the entire Joint Treatment Site would have backup power for essential functions and equipment. This would include a dual power feed from the appropriate electricity purveyor or emergency diesel generators.

4.3.2 Backbone Conveyance System

The backbone conveyance system would consist of the backbone pipeline, associated pump stations, service connections, and other appurtenances. Construction and operational activities associated with these facilities are discussed below.

4.3.2.1 Construction

Backbone Pipeline

As indicated earlier, the backbone pipeline has been divided into eight reaches to facilitate design and construction (**Figure 2-3**). Construction would utilize a variety of methods based on the characteristics of each portion of the pipeline alignment. These methods would include both open-cut trenching and tunneling (**Figures 4-4a** through **4-4c**). Open-cut trenching would occur for a majority of the backbone pipeline within public roadways and ROWs along the San Gabriel River. This method of construction typically involves excavating a trench, installing pipe, backfilling the trench, and restoring the disturbed ground area to pre-existing conditions. Pipe installation with the open-cut trenching method would occur by placing

Open-Cut Trench Pipeline Construction – Representative Photo

segments of steel pipe within the trench and then welding them together. Construction zones for trenching activities would generally be up to 90 feet in width, including a trench up to 18 feet wide. Typical trench depths are expected to be up to 21 feet deep; however, deeper trench depths are anticipated at select locations to facilitate crossing under existing utilities or structures. Additionally, wider construction zones may be required at deeper trench depth locations to accommodate a wider excavation area and equipment access.

To the extent feasible, tunneling methods would be used to minimize impacts to the Los Angeles and San Gabriel rivers, natural and improved channels and waterways, transportation systems (intersections, freeways, and railroads), sensitive environmental resources, existing infrastructure, and areas with limited ROWs. Tunneling methods would include traditional tunneling or other trenchless methods, such as pipe jacking and microtunneling. Each of the tunneling methods would involve excavation of a launching shaft and a receiving shaft. The launching shaft would be located at the beginning of the tunneled segment at which equipment is placed and begins tunneled excavation in a horizontal direction. The receiving shaft would be located at the end of the tunneled segment from which the equipment is retrieved. The excavated tunnel diameter would range from 8.5 feet to 15 feet depending on size of pipe and type of tunneling method. The depth of the tunnel could vary; however, most tunneled areas currently are anticipated to be 45 feet deep or shallower.

Traditional tunneling methods would be used for longer tunneled segments of pipe and would utilize either a closed-face, open-face, or tunnel shield tunnel boring machine. A closed-face tunnel boring machine is required for soft ground tunneling below groundwater. It operates by excavating the tunnel through use of a cutting head, conveying excavated material out of the tunnel, and placing a precast concrete liner within the tunnel as ground support behind the excavation. Welded steel pipe is then installed within the concrete liner and the annular space between the pipe and tunnel lining is backfilled with grout. An open-face or tunnel shield tunnel boring machine can be used in dry soils with reasonable stability where it could employ a cutter head, digger arm, or road header to excavate the ground. In some dry and stable soils, steel ribs and timber lagging could also be used as ground support for the excavation in lieu of a precast concrete liner prior to installation of the steel carrier pipe and backfilling of the space between the liner and the pipeline.

Tunnel Boring Machine – Representative Photo

Microtunneling and pipe jacking would be used for shorter segments of pipe. Microtunneling is used below groundwater and uses a microtunnel boring machine to excavate the ground using a pumped slurry that counterbalances the groundwater pressure and pumps spoils to the surface. The ground is supported using a casing pipeline string that is jacked into the ground behind the microtunnel boring machine. The final carrier pipe is installed within the casing pipe, which can be steel or concrete and has

a diameter that is approximately two feet larger than the final pipeline (i.e., 9-foot diameter for the 7-foot pipeline and 11-foot diameter for the 9-foot pipeline).

For crossings above groundwater in stable soils, pipe jacking could be used. Similar to microtunneling, a pipe jacking shield excavates the ground while a casing pipeline is jacked in place behind the excavation. Since pipe jacking is performed in dry, stable conditions, the excavation is done with an open cutterhead or mechanical excavator at the face, and spoils are transported to the surface with conveyor belts or haul carts.

Depending on the construction method, most reaches would typically employ no more than 100 workers per day.

Temporary construction staging and storage areas would be required along the pipeline alignment to support these construction activities. The staging and storage areas would have various uses, but generally would include installation of construction trailers, temporary utility connections, equipment and materials storage, stockpiling of soil, and construction employee parking. To the extent feasible, previously disturbed sites would be selected based on availability during final design or at the time that construction is ready to proceed. Site preparation for the staging and storage areas would include clearing and grading, minor excavation for utility connections, fencing, and possible gravel placement. Longer tunnel sections may require intermediate shaft sites for maintenance or ventilation along the length of the alignment and would require similar construction activities as staging and storage areas.

After construction, temporarily disturbed areas would be restored to original conditions, which could include repaving, re-establishment of curb and gutter, and landscaping. Restoration would proceed as construction areas are completed for each reach of the pipeline.

Pump Stations

Construction activities associated with the pump station located at the AWP Facility are described earlier in Section 4.2.1.2. Construction activities associated with the Whittier Narrows Pump Station and Santa Fe Pump Station would involve the purchase of properties to accommodate the pump station and associated electrical substation facilities. If the properties include existing development, demolition of the structures would be required as the initial construction activity. Subsequent construction activities would include site preparation (e.g., asphalt removal, clearing, and grubbing) and grading; structural excavation, trenching for pipes, and foundation development; structure construction and installation; installation of pumps, valves, instrumentation and electrical equipment; paving and fence installation; and architectural coatings. Construction also would involve the installation of offsite pipelines to connect the pump station facilities to the backbone pipeline. Similarly, if the electrical substation is located offsite from the pump station, installation of electrical utilities, likely through new easements, would be required to connect the substation to the pump station facilities.

Service Connections

Service connections to connect the backbone pipeline to recipient water agencies' facilities would include construction of smaller-diameter lateral pipes and turnout and meter structures. Construction of these facilities would include site preparation and grading, excavation and trenching, installation of pipe, turnouts and meters, valves, backfilling, and site restoration. The trench size for these facilities would vary based on the size of the interconnecting lateral pipe, but would generally be up to 18 feet wide for the pipe and 36 feet wide for the turnout and meter structures. The trench depths are expected to be

similar to those of the backbone pipeline for the interconnecting pipe and would be up to 10 feet deeper for the turnout and meter structures to accommodate access, structure foundation, and sump pumps.

To accommodate the interconnecting pipe, trenchless methods would be used, to the extent feasible, to minimize impacts to rivers, natural and improved channels and waterways, transportation systems, sensitive environmental resources, and areas with limited ROWs, similar to the backbone pipeline. The turnout and meter structures would be constructed by Metropolitan, while the interconnecting lateral pipes would be developed, constructed, and managed by the recipient water agencies.

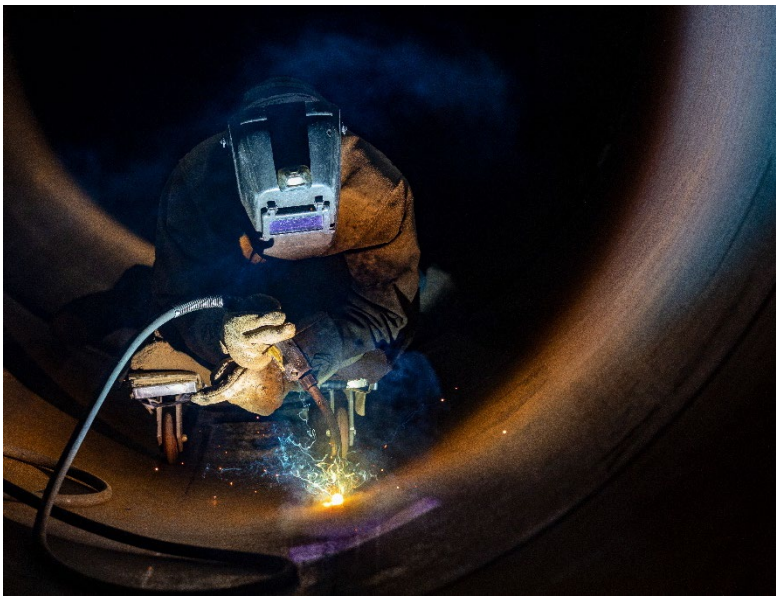
4.3.2.2 Operation

Backbone Pipeline

Operational activities for the backbone pipeline include water quality sampling and patrolling of access and patrol roads and public streets for visual inspection of above-ground ancillary facilities and for security purposes. Operational activities also would consist of dewatering, inspection, and maintenance for the pipeline and appurtenant facilities, as well as inspection, grading, and maintenance for the easement areas and patrol roads, primarily along the San Gabriel River.

Prior to dewatering of the backbone pipeline, the Los Angeles Regional Board would be notified and the necessary discharge permits would be obtained. Dewatering would occur periodically to facilitate internal inspection, maintenance, and repair of the pipe and appurtenant facilities, as appropriate. The pipeline would initially be drained by gravity to the extent feasible. In areas of the pipe that cannot be drained by gravity, the water would be pumped out. Discharges associated with dewatering would be directed to storm drains, drainage channels, or street gutters. In locations where dewatering would occur in public streets, Metropolitan would coordinate with the local jurisdiction for traffic control measures. Additionally, the released water would be monitored regularly, and sandbags and other erosion control devices would be placed as required to prevent traffic hazards or other dangerous conditions from developing. All water would eventually be discharged into an improved drainage facility or dissipated in a manner that does not cause damage or erosion. Where necessary, the water would be dechlorinated prior to discharging into drainageways.

Following the dewatering activities, inspection, maintenance, and repair work, if necessary, would occur. Inspection activities would generally include walking the interior of the pipeline to inspect the condition of the lining, identify areas of corrosion, and conduct measurements of the thickness of the steel pipeline. Inspection activities could also include walking the exterior of the pipeline and inspecting the appurtenances. Maintenance and repair activities could include localized lining repairs, removal of corrosion, replacement of valves and appurtenances, and, if necessary, welding repair of joints. As with dewatering, if these activities are located within public streets, Metropolitan would coordinate with the local jurisdiction for traffic control measures.



Welding Repair – Representative Photo

Dewatering, inspection, maintenance, and repair activities could occur around the clock to minimize downtime of the pipeline. Daytime work is preferred where practical; however, if nighttime work is required, Metropolitan would obtain any necessary permits and appropriate notification to the local jurisdiction and/or impacted residents would occur at least 24 hours in advance.

Pump Stations

Operational activities for the Whittier Narrows Pump Station and Santa Fe Pump Station would include operation of pumps and electrical facilities; inspection, maintenance, and repair of facilities, structures and equipment; and occasional grading for stormwater management and erosion control. The pump stations would be monitored and operated from a regional operational control center with no regular onsite staff. Regular patrolling of the facilities would occur for visual inspections and security purposes.

Service Connections

Operational activities for the service connections would include inspection, maintenance, and repair of facilities, structures, and equipment. The service connections are anticipated to be unmanned facilities where the equipment would normally be monitored from a regional operational control center. Regular patrolling of the facilities would occur for visual inspections and security purposes.

4.3.3 Recharge Facilities

Purified water would be used to replenish groundwater basins via spreading facilities and injection wells. Construction and operational activities associated with these facilities are discussed below.

4.3.3.1 Construction

Piping would be constructed from service connections along the backbone pipeline to discharge locations at new and existing spreading facilities and injection well sites. The piping would be constructed mostly by trenching, with tunneling in certain areas to minimize impacts to rivers, natural and improved channels and waterways, transportation systems, sensitive environmental resources, and areas with limited ROWs, similar to the backbone pipeline.

At the spreading facilities, a concrete headwall with wingwalls and a velocity dissipating structure would be constructed at each new pipe discharge location. Grading of existing and proposed recharge basins may be needed to properly distribute the new discharge flow from Pure Water within the basin. At new injection well sites, construction would involve property acquisition for the new wells. If the properties include existing development, demolition of the structures would be required as the initial construction activity. Subsequent construction activities would include site preparation; drilling the wells; installation of well casings; construction of well equipment pads; installation of piping, pump, and valving; and site restoration.

There are no anticipated construction activities associated with reducing or suspending imported water deliveries at PM-26, CENB-48, and USG-3.

4.3.3.2 Operation

Operational activities associated with the spreading facilities would include water discharges into the spreading facilities and inspection, maintenance, and operation of flow control structures and valves. To ensure proper function and infiltration, the recharge basins may require periodic maintenance such as cleaning of facilities and structures, mowing of vegetation, erosion repair, and loosening, aerating, or replacing soils to ensure proper water infiltration.

Operational activities for the injection wells would include operation of the wells and inspection, maintenance, and repair of facilities and equipment associated with the wells. Potential redevelopment of the wells, which would include similar activities as those described above for construction of the wells, could also be required. The injection wells are anticipated to be unmanned facilities where the equipment would normally be monitored from a regional operational control center. Regular patrolling of the facilities would occur for visual inspections and security purposes.

As described in Section 4.2.3, existing recharge activities would be reduced or suspended at PM-26, CENB-48, and USG-3 as a result of Pure Water. Operational impacts associated with biological resources and hydrology and water quality are discussed further in Sections 5.2, *Biological Resources,* and 5.8, *Hydrology and Water Quality*, respectively.

4.3.4 DPR Facilities

Construction and operation information for DPR facilities at the AWP Facility are incorporated into the discussion presented above in Section 4.3.1 for the Joint Treatment Site. Construction and operation of DPR facilities at a satellite location would be similar to that presented below for the DPR facilities at Weymouth WTP. Therefore, as indicated earlier, there is no separate discussion regarding construction and operational activities associated with the satellite location.

4.3.4.1 Construction

Construction activities associated with both Phase 1 and Phase 2 DPR facilities at the Weymouth WTP would include potential demolition of existing structures; site preparation, including asphalt removal, clearing, and grubbing; structural excavation; trenching for pipes, sectionalizing valve structures, and flow meter structures; foundation development; grading; structure construction and installation; paving and fence installation; and architectural coating.

The Azusa Pipeline would be retrofitted using a combination of trenchless methods and spot repairs involving trench excavation. The new pipelines connecting the Azusa Pipeline to the backbone pipeline and the Weymouth WTP would be installed primarily via trenching methods, with jack-and-bore methods used to cross under I-210. Construction of the pump stations associated with this pipeline could include purchase of property to accommodate the pump station and potential demolition of existing structures if the property is developed. Additional construction activities would include site preparation and grading; structural excavation, trenching for pipes, and foundation development; structure construction and installation; paving and fence installation; and architectural coatings. Construction also could involve the installation of offsite pipelines to connect the pump station facilities to the Azusa Pipeline.

Construction activities associated with the DPR pipeline would include open-cut trenching along roadways and public ROWs with potential trenchless construction at intersections. Pump station construction could include purchase of property and potential demolition of existing structures if the property is developed; site preparation and grading, structural excavation, trenching for pipes, and foundation development; structure connection and installation; paving and fence installation; and architectural coatings. Construction also could involve the installation of offsite pipelines to connect the pump station facilities to the DPR pipeline.

4.3.4.2 Operation

Operation for both Phase 1 and Phase 2 DPR facilities at the Weymouth WTP would be integrated with the existing operational activities at the site. These activities include inspection, maintenance, and operation of facilities, structures, and equipment; storage of equipment and materials; delivery, storage, and management of treatment chemicals; and monitoring of water quality. As with regular operational activities at the Weymouth WTP, inspections, maintenance activities, and deliveries would occur during regular working hours. Treatment processes and water quality monitoring could occur around the clock depending on need. All processes would comply with applicable regulatory permits.

For the Azusa Pipeline and DPR pipeline, operational activities include maintenance and repair, if necessary, of facilities, structures, and equipment. Regular patrolling of the facilities would occur for visual inspections and security purposes

Operational activities for the pump stations along the Azusa Pipeline and DPR pipeline would include operation of pumps and electrical facilities; inspection, maintenance, and repair of facilities, structures and equipment; and occasional grading for stormwater management and erosion control. The pump stations would be monitored and operated from a regional operational control center with no regular onsite staff. Regular patrolling of the facilities would occur for visual inspections and security purposes.

4.3.5 Non-potable Water Facilities

Non-potable water facilities include service connections that would connect the backbone pipeline to potential users for non-potable applications, including West Basin MWD and LADWP. In addition, the Warren Facility, AWP Facility, and other nearby uses would also utilize non-potable water for utility and irrigation purposes. A description of the construction and operation of the non-potable water facilities associated with the Warren Facility and AWP Facility are integrated with the overall discussion of construction and operation of the Joint Treatment Site in Section 4.3.1. A description of the construction and operational activities for the non-potable water facilities associated with the backbone pipeline is provided below.

4.3.5.1 Construction

Construction of the non-potable water facilities would typically involve excavating a trench, installing pipe, constructing turnout and meter structures, backfilling the trench, and restoring the disturbed ground to pre-existing conditions. The size and depth of the construction area would vary based on the specific non-potable water facility. These facilities are anticipated to be located within public roadways and on Sanitation Districts-owned property.

4.3.5.2 Operation

Operational activities for non-potable water uses would include maintenance of facilities, structures, and equipment. Regular patrolling of the facilities would also occur for visual inspections and security purposes.

4.3.6 Sanitation Districts Support Facilities

4.3.6.1 Construction

Construction of the Sanitation Districts support facilities would involve demolition of existing structures and pavement, followed by site preparation and grading of the new areas where these facilities would be located. Trenching would be required to install utilities and additional grading would be needed to prepare the site for foundations required for all structures. After the foundation, work would continue with building enclosures, roofing, interior construction, utility hookups, interior and exterior finishes, and asphalt paving for access roads and parking.

4.3.6.2 Operation

Operation of Sanitation Districts support facilities would include loading and unloading of materials in the warehouse; handling of materials at the grit, screenings, and sewer cleanings handling station; and testing activities at the Secondary Treatment Area Research Facility. At the grit, screenings, and sewer cleanings handling station, trucks would back down the inclined truck ramp to unload grit, screenings, and digester cleanings collected from the wastewater treatment process and sewer cleanings collected from sewer cleaning activities throughout Los Angeles County into large dewatering containers. The liquids in the dewatering containers would drain to the wet well of the pump station and then pump to the sewer. Hose bibbs would be provided at the station for vehicle and ground washdown. The station would also have a building for trucks to decant liquids prior to dumping solids into the dewatering containers. Full dewatering containers would be transported to and dumped at a landfill. The grit cleaning station would be a self-serve facility, but the Sanitation Districts' heavy equipment operators

would support materials handling operations as needed. The grit, screenings, and sewer cleanings handling station is expected to be similar to the current operation and handle approximately 25 tons of solids waste per day. The new research facility would be used to test different technologies, equipment, processes, and other physical, chemical, and biological applications associated with wastewater treatment. Daily activities at this facility would include sampling, analysis, pilot operations and maintenance, inspection, and data collection. Approximately 10 staff would be working at the new research facility, which is consistent with the number working at the existing research facility.

4.4 ECONOMIC AND FISCAL

The estimated capital cost associated with full buildout of the Pure Water program is $8.113 billion. This estimate includes program management, design services, construction, and equipment costs, as well as costs associated with property acquisition, community benefits, and mitigation measures. The estimated operations, maintenance, and repair costs associated with the full program total $228 million per year. These estimates are in 2023 dollars, without escalation. **Table 4-2** provides a rough breakdown of these estimated costs by phase and subphase.

Table 4-2
COSTS FOR PURE WATER

Phase/Subphase	Capacity (MGD)	Capital[1]	Annual OMR
Initial Delivery	30	$1.991 billion	$62 million
Additional IPR/DPR	85	$4.397 billion	$166 million
Total Phase 1	**115**	**$6.388 billion**	**$228 million**
Additional DPR	35	$1.725 billion	$81 million
Total Phase 2	**150**	**$8.113 billion**	**$309 million**

[1] 2023 dollars without escalation.
OMR = operations, maintenance, and repair costs

Costs for Pure Water may be funded through a combination of rates and charges, grants, loans, third-party contributions, or other financing mechanisms. For Metropolitan, any program costs not covered by outside funding sources could be recouped in a variety of ways. In October 2023, Raftelis prepared a report that identified three potential approaches to cost recovery: utilize Metropolitan's existing rate structure, create a new fixed charge, or establish a direct investor model (Raftelis 2023). Subsequently, Metropolitan staff generated two additional approaches for consideration: create a new volumetric surcharge or adopt a general obligation ad-valorem property tax. Metropolitan has not made any decision on how best to recover its program costs, which could involve a combination of the approaches listed above or a different cost recovery approach altogether.

While implementing Pure Water would require a significant financial commitment, it would provide a host of economic benefits that extend well beyond Metropolitan's service area. In August 2021, the Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC) completed a study commissioned by Metropolitan that analyzed the projected economic and fiscal impact of both construction expenditures and ongoing activity associated with Pure Water (LAEDC 2021). In April 2025, LAEDC reviewed and updated its earlier study at Metropolitan's request (LAEDC 2025).

According to the updated study report, construction of Pure Water's facilities and components is expected to generate over $15.1 billion in total economic output and support approximately 75,660 job-

years[6] across the Southern California region, including 43,700 job-years directly to the program and another 31,950 job-years through indirect and induced effects. The total supported labor income associated with Pure Water is estimated to be over $6 billion. These jobs would span numerous industry sectors, including engineering, manufacturing, construction, finance, and management. In addition, it is estimated that construction of Pure Water would contribute $719.4 million in state and local tax revenue and over $1.4 billion in federal tax revenue (LAEDC 2025).

Pure Water also would have a recurring positive impact on the regional economy once construction is completed. The updated study report indicates that annual operations and maintenance activities are expected to generate over $640 million in total economic output and support approximately 2,460 job-years across the Southern California region, with the total supported labor income estimated at nearly $239 million. Furthermore, these activities would contribute over $48 million in state and local taxes and over $57 million in federal taxes each year (LAEDC 2025).

All this said, Pure Water is first and foremost about ensuring Southern California has the water its needs. As acknowledged by LAEDC, "This innovative program will create a new, locally sourced, climate-resilient water supply, reducing reliance on imported water, and enhancing regional water security." As such, Pure water "will provide significant benefits beyond the economic impact of its construction and ongoing operations" (LAEDC 2025).

4.5 DISCRETIONARY ACTIONS, PERMITS, AND APPROVALS

If this EIR is certified, Metropolitan, the Sanitation Districts, and other public agencies will review, consider, and rely on the information in this EIR prior to taking discretionary action with respect to Pure Water, such as issuing approvals, permits, or licenses; entering into construction contracts or agreements; or providing grants, loans, or other forms of financial assistance.

Construction and operation of Pure Water also would require real property acquisitions in the form of temporary and permanent rights from public agencies, private utilities, and private landowners. Temporary rights such as temporary easements, leases, licenses, and permits would be required for temporary use of property for construction activities. Permanent rights, such as fee interests, permanent easements, and lease agreements would be required for treatment facilities, pipelines, pump stations, and recharge facilities. **Table 4-3** lists potential permits and approvals that may be required for Pure Water.

Table 4-3
ANTICIPATED PERMITS AND APPROVALS

Agency/Entity	Permit/Approval
Federal	
U.S. Army Corps of Engineers	Temporary/Permanent Easement
	Clean Water Act Section 404 Nationwide Permit
	Rivers and Harbors Act Section 10 Permit
	Rivers and Harbors Act Section 408 Permit

[6] One job-year refers to a worker working full time for that year. In analyzing the total economic impacts of a multi-year development project, employment impacts are typically expressed in job-years rather than the number of jobs. This is because many associated positions are sustained over multiple years over the development period.

Agency/Entity	Permit/Approval
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 or Section 10 Consultation
U.S. Environmental Protection Agency (delegated to State Water Resources Control Board in California)	Clean Water Act Section 401 Water Quality Certification
	Construction General Permit Order 2022-0057-DWQ
	Industrial General Permit Order 2014-0057-DWQ (amended by Orders 2015-0122-DWQ and 2018-0028-DWQ)
	General Construction and Project Dewatering Permit Order R4-2018-0125
	NPDES Discharge Permit Modification
	Waste Discharge Requirements
	Water Reclamation Requirements
State	
California Department of Conservation, Geologic Energy Management Division	Permits to plug oil wells
California Department of Fish and Wildlife	California Fish and Game Code Section 1602 Streambed Alteration Agreement
	California Endangered Species Act Section 2080.1 or Section 2081 Consultation
California Department of Transportation	Encroachment Permit
	Transportation Permit for Oversize/Overweight Loads
State Water Resources Control Board Division of Drinking Water	Water Supply Permit or Water Supply Permit Amendment
	Title 22 Engineering Report – IPR/NPR
	Title 22 Engineering Report – DPR
	Operations and Optimization Plan, Startup Plan, Test Protocols, and Tracer Study
Regional	
Los Angeles County Metropolitan Transit Authority	Property and Easement Acquisition/License Agreements
South Coast Air Quality Management District	Permits to Construct and Operate
Southern California Edison	Temporary/Permanent Easement
Union Pacific Railroad	Property and Easement Acquisition/License Agreements
Local	
Los Angeles County Department of Public Works	Panama Avenue Storm Drain Relocation Permit
Los Angeles County Department of Public Works, Flood Control District	Temporary/Permanent Easement
Los Angeles County Sanitation Districts	Industrial Waste Discharge Permit
Los Angeles Department of Water and Power	Temporary/Permanent Easement
Municipal – The municipalities listed below may require a variety of permits, such as:	
City of Azusa	Encroachment Permit, Traffic Control Permit, Haul Permit, Grading Permit, Hazardous Waste Permit, Building Department Permit, Fire Protection System Permit, Certificate of Occupancy
City of Baldwin Park	
City of Bellflower	
City of Carson	
City of Cerritos	
City of Covina	
City of Downey	

Agency/Entity	Permit/Approval
City of Duarte	
City of Glendora	
City of Industry	
City of Irwindale	
City of La Verne	
City of Lakewood	
City of Long Beach	
City of Norwalk	
City of Pico Rivera	
City of San Dimas	
City of Santa Fe Springs	
City of Whittier	
County of Los Angeles	

4.6 REFERENCES

Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC). 2025. Metropolitan Water District: Pure Water Southern California – An Updated Economic Impact Study. April.

Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC). 2021. Metropolitan Water District: Regional Recycled Water Program – An Economic Impact Study. August.

Los Angeles County Sanitation Districts (Sanitation Districts). 2022. Pure Water Southern California RO Concentrate Ocean Discharge Compliance Assessment. October 18.

Raftelis. 2023. Pure Water Southern California Conceptual Costs Recovery Alternatives. October 3.

5.0 ENVIRONMENTAL IMPACT ANALYSIS

This chapter provides a detailed discussion and analysis of the potential environmental impacts associated with Pure Water, organized alphabetically by environmental resource category. For each environmental resource category, this discussion is divided as follows: (1) environmental setting/existing conditions; (2) regulatory framework; (3) significance thresholds; (4) environmental commitments; (5) impact analysis; (6) level of significance before mitigation; (7) mitigation measures; and (8) level of significance after mitigation.

5.0.1 Terminology

Environmental Setting/Existing Conditions – The environmental setting and existing physical conditions pertinent to the environmental resource category being addressed. Existing conditions at the time of NOP publication are used as the baseline for analysis of potential impacts, unless the EIR identifies a different baseline in the specific resource category section.

Regulatory Framework – The applicable plans, policies, regulations, and permitting requirements established by those federal, state, and local agencies with jurisdiction over Pure Water.

Significance Thresholds – The levels at which potential environmental impacts from implementation of Pure Water are determined to be significant. To assess significance, Metropolitan uses the impact criteria set forth in Appendix G of the CEQA Guidelines, supplemented where necessary with other applicable and appropriate criteria.

Environmental Commitments – Those measures that have been incorporated as part of Pure Water at the outset as part of responsible design and environmental stewardship. Environmental commitments are considered part of Pure Water as proposed, similar to its physical design features.

Impact Analysis – The analysis of the direct and reasonably foreseeable indirect potential impacts associated with implementation of Pure Water. Short-term impacts generally are associated with construction of Pure Water. Long-term impacts generally are associated with operation of Pure Water.

Level of Significance Before Mitigation – The level of significance of potential environmental impacts before adoption of any mitigation measures for Pure Water.

Mitigation Measures – Those measures that will be adopted and implemented to avoid, reduce, compensate, or otherwise mitigate any potentially significant environmental impacts associated with Pure Water.

Level of Significance After Mitigation – The level of significance of potential environmental impacts after adoption of mitigation measures for Pure Water.

5.0.2 Analytical Approach

The format, scope, and content of this chapter follows the requirements set forth in CEQA Guidelines Sections 15125 through 15126.4, and the reader generally is directed to those sections for more detail on such requirements. However, two areas regarding the analytical approach used to assess the potential environmental impacts of Pure Water are further discussed below.

5.0.2.1 Level of Analysis: Program vs. Project

As noted in Chapter 4, *Project Phasing and Detailed Description,* different levels of detail exist for the various facilities and components that would be part of Pure Water. In general, there currently is more detail and certainty with respect to the AWP Facility and the backbone pipeline, and less detail and certainty with respect to the proposed pump stations and service connections associated with the backbone conveyance system and recharge, DPR, non-potable water, and Sanitation Districts support facilities. As a result, this EIR assesses potential environmental impacts at different levels depending on the available information.

Specifically, for each environmental resource category, potential impacts first are analyzed on a program-level basis for Pure Water as a whole. This analysis takes a broader and more regional perspective, based on the anticipated location and overall footprint of the Pure Water facilities and components. Potential impacts then are further analyzed on a project-level basis for those facilities and components for which there is sufficient information. This analysis is more detailed and focused and is intended to fully assess potentially significant impacts associated with specific facilities, components, and activities.

In accordance with CEQA, those Pure Water facilities and components for which a project-level analysis has been completed would be subject to potential approval and implementation following certification of this EIR. In contrast, those facilities and components for which only a program-level analysis has been completed may require additional or supplemental environmental review and analysis prior to approval and implementation (PRC Section 21166; CEQA Guidelines Sections 15162-15164, 15168).

5.0.2.2 Reduction of Potential Impacts: Environmental Commitments vs. Mitigation Measures

For Pure Water, there are essentially two ways potential environmental impacts are being addressed.

The first way is through the incorporation of up-front measures that Metropolitan would undertake to protect the environment as part of Pure Water design and responsible environmental stewardship. In this EIR, such up-front measures are referred to as "environmental commitments" and are designated with the letters "EC." These environmental commitments generally encompass those legal requirements and standard practices that Metropolitan would follow for any project of this nature and scope (such as a Storm Water Pollution Prevention Plan), as well as actions driven by Metropolitan's own plans, policies, and directives (such as its Climate Action Plan [CAP]). For each resource category, these environmental commitments are described prior to the analysis of potential impacts. As with Pure Water's physical design features, and unless otherwise noted in the analysis of each resource category, these commitments are factored into the assessment of whether and to what extent Pure Water would have potentially significant impacts without mitigation.

The second way is through the adoption and implementation of feasible mitigation measures to reduce the potential impacts of Pure Water as currently proposed. In this EIR, such mitigation measures are designated with the letters "MM" and encompass measures specific to Pure Water to mitigate potential impacts not addressed through project design and environmental commitments. For each resource category, these mitigation measures are described following the analysis of potential impacts and then are used to assess whether and to what extent Pure Water would have potentially significant impacts even with mitigation.

It is important to note that while the distinction between environmental commitments and mitigation measures is relevant for analytical purposes, it does not alter the ultimate determination and conclusion of whether Pure Water would have potentially significant impacts with respect to any given resource category. All environmental commitments and mitigation measures identified in this EIR will be incorporated into the proposed mitigation monitoring and reporting program for Pure Water and thus will be fully enforceable if Pure Water is approved (CEQA Guidelines Section 15097).

5.0.3 Stewardship Programs, Plans, and Initiatives

As just noted, Pure Water would include specific environmental commitments and mitigation measures to address anticipated impacts of the program, both as designed and as built. Beyond this, Metropolitan has programs, plans, and initiatives aimed at fulfilling its mission to provide "its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way." In addition, Metropolitan and the Sanitation Districts are working together to ensure Pure Water is pursued in a manner that is sensitive to the communities that would be most affected by this program. The discussion below briefly summarizes those stewardship programs, plans, initiatives, and actions that are most pertinent to Pure Water. Where relevant to the environmental analysis, they are further discussed in later sections of this chapter.

5.0.3.1 Climate Action Plan

In May 2022, Metropolitan adopted a comprehensive CAP, which set a path to achieve the state's target goal of reducing greenhouse gas (GHG) emissions by 40 percent below 1990 levels and reaching carbon neutrality by 2045. The CAP sets targets and strategies for reducing GHG emissions from Metropolitan's operations, including the conveyance, storage, treatment, and delivery of water throughout its 5,200 square-mile Southern California service area. Pure Water was analyzed and included in the CAP through CAP Measure WC-6, which calls for the implementation of advanced technology systems to increase Metropolitan-owned recycled and groundwater recovery systems to maintain local water supply. Specifically, the CAP analyzed the construction and operational GHG emissions estimated from Pure Water, including up to 40 miles of pipelines, three pump stations, and groundwater recharge activities. (Metropolitan 2022).

5.0.3.2 Climate Adaptation Master Plan for Water

Metropolitan is developing a Climate Adaptation Master Plan for Water (CAMP4W) to address the challenges presented by climate change. CAMP4W takes a holistic approach that considers both water supply needs and financial constraints. CAMP4W is focused on expanding Metropolitan's water resource portfolio and improving the resilience and reliability of its system, while ensuring that investments are made with an eye toward affordability and financial sustainability. Once adopted, CAMP4W would provide a roadmap guiding Metropolitan's future selection and investment in various capital projects, including Pure Water, as it confronts the new climate reality in the years ahead (Metropolitan 2025a).

5.0.3.3 Sustainability, Resilience, and Innovation Initiatives

In addition to its CAP and CAMP4W, Metropolitan has other initiatives focused on environmental stewardship that are overseen and managed by its Office of Sustainability, Resilience, and Innovation. These include initiatives aimed at transitioning Metropolitan's fleet to zero emission vehicles; identifying and pursuing alternative sources of green energy; promoting innovative approaches to local water

supply development and conservation; supporting research, evaluation, and pilot studies of water- and energy-saving technologies; managing and mitigating fire risks associated with Metropolitan's operations; and providing education and training to staff on ways to deliver more sustainable infrastructure (Metropolitan 2025b). These initiatives are expected to help inform and guide implementation of Pure Water as it moves forward.

5.0.3.4 Envision Framework and ASCE Standard for Sustainable Infrastructure

The Institute for Sustainable Infrastructure (ISI) is an education and research nonprofit established in 2010 by the American Public Works Association, the American Society of Civil Engineers (ASCE), and the American Council of Engineering Companies. ISI's core mission is to "help communities around the world build sustainable, resilient, and equitable civil infrastructure" (ISI 2025a). In 2011, ISI published the first version of Envision, a framework and rating system aimed at helping agencies and professionals plan, design, and deliver such infrastructure. The Envision framework has been updated twice since then and a third update is expected in 2028 (ISI 2025b). In support of ISI's mission, ASCE published the Standard Practice for Sustainable Infrastructure, ASCE/COS 73-23 in October 2023. This first-of-its-kind standard "provides guidance for infrastructure owners to develop and implement sustainable solutions throughout a project's entire life cycle" (ASCE 2023). Metropolitan and the Sanitation Districts intend to seek Envision verification for Pure Water and to follow ASCE/COS 73-23 where appropriate.

5.0.3.5 Workforce Development

As noted in prior chapters, Metropolitan and the Sanitation Districts plan to establish a Workforce Training Center as part of the Joint Treatment Site in the City of Carson, which would provide education, training, and certification in a wide variety of trades. This center would offer career pathways related to Pure Water, as well as opportunities across the broader water supply, wastewater management, and treatment sectors. In addition, Pure Water would be constructed under a Project Labor Agreement, which would ensure fair wages, offer robust training, and prioritize hiring local and transitional workers.

5.0.3.6 Community Improvements and Benefits

In carrying out their missions, Metropolitan and the Sanitation Districts recognize the importance of being mindful of and respectful to the communities in which they operate. As such, these agencies have taken an expansive approach to addressing the potential impacts of Pure Water on surrounding communities. Indeed, many of the environmental measures and actions being proposed go beyond the minimums required to address program needs and CEQA mandates.

For example, construction at the Joint Treatment Site would require eight on-site oil wells to be plugged or replugged. However, as part of Pure Water, the Sanitation Districts also are planning to pursue closure of four other oil wells (three active and one idle) located within its property boundary, even though it is not necessary for construction or operation at the Joint Treatment Site. Closure of these wells would eliminate a potential source of pollution and represent a benefit to those who live and work in proximity to the Warren Facility.

As another example, to mitigate potential GHG emissions associated with Pure Water, at least 1.5 MW of solar panels and 115 EV charging stations would be installed at the Joint Treatment Site. But in addition, Metropolitan and the Sanitation Districts are exploring other ways to further offset GHG emissions above that required by CEQA. These might include utilizing onsite renewable energy sources during construction and operation of facilities at the Joint Treatment Site, purchasing renewable energy

credits during operation of Pure Water, planting additional trees and vegetation within the footprint of its facilities and components, and incorporating other green features into the program.

Lastly, Metropolitan and the Sanitation Districts are exploring potential development of a community benefits program. Though voluntary, these types of programs are common for large infrastructure projects and are intended to offset economic, social, or other effects that are not addressed under CEQA or through compliance with other laws, rules, and regulations. Such funds can be and often are used in support of environmentally friendly projects, such as local parks, recreational facilities, and green spaces.

5.0.3.7 Outreach Charter and Good Neighbor Guidelines

Fostering an inclusive community outreach program is an integral part of Pure Water. Metropolitan and the Sanitation Districts have established an outreach charter with an emphasis on engaging underserved communities. As part of this charter, Metropolitan and the Sanitation Districts are committed to listening to, communicating with, and involving residents and community members in the development and implementation of Pure Water.

Metropolitan and the Sanitation Districts also are committed to following "good neighbor guidelines" for Pure Water when undertaking work in areas that may impact neighborhoods, homes, and businesses. This includes communicating potential impacts, responding to inquiries in a timely manner, and maintaining an active dialogue with affected communities, both before and during construction. It also includes collaborating with local communities to minimize the impact of such work and restoring impacted areas to their original condition or better.

5.0.4 References

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5.1 AIR QUALITY

This section addresses the potential air quality impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts with and without mitigation. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

AIR QUALITY LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations[1]	Yes
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

[1] While the specific locations for the pump stations are currently not known, they are analyzed at the project-level for this air quality analysis since air quality impacts are generally not location-specific.

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared for the Joint Treatment Site and backbone conveyance system (HELIX 2025; Appendix B).

5.1.1 Existing Conditions

5.1.1.1 Background

The California Air Resources Board (CARB) is a state agency charged with protecting the public from the harmful effects of air pollution, overseeing the state's compliance with the federal Clean Air Act, and developing programs and actions to counteract global warming and anthropogenic climate change. CARB is the lead agency for climate change programs and oversees all air pollution control efforts in California to attain and maintain health-based air quality standards. Additionally, CARB enforces emissions standards for mobile sources, such as trucks, buses, and other vehicles.

California is divided into 15 air basins to better manage air pollution. Air basin boundaries were determined by grouping together areas with similar geographical and meteorological features. Pure Water is located in Los Angeles County, which is within the South Coast Air Basin (SCAB). The SCAB includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to all of Orange County and the San Gorgonio Pass area in Riverside County. The SCAB is regulated by the South Coast Air Quality Management District (SCAQMD). The SCAQMD periodically adopts an air quality management plan (AQMP) for the SCAB, then develops air pollution control rules and regulations; establishes permitting requirements for stationary sources; inspects stationary emission sources; and enforces such measures through educational programs or civil penalties, when necessary. SCAQMD enforces emissions standards for stationary sources, such as factories and facilities, and indirect sources, such as shopping centers, warehouses, and ports. The SCAQMD has some of the most stringent air quality regulations in the world.

The CARB and the SCAQMD are both responsible for air quality in the SCAB, but they have different roles and responsibilities. CARB and the SCAQMD work together to ensure that federal and state air quality standards are met in the SCAB.

5.1.1.2 Air Pollutants of Concern

Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, criteria air pollutants include the following compounds:

- Ozone
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM), which is further subdivided:
  - Respirable PM, 10 microns or less in diameter (PM_{10})
  - Fine PM, 2.5 microns or less in diameter ($PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead

Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants in the atmosphere (secondary pollutants; e.g., ozone, NO_2, PM_{10}, and $PM_{2.5}$). PM_{10} and $PM_{2.5}$ can be both primary and secondary pollutants. The principal precursor pollutants of concern are reactive organic gases (ROGs), also known as volatile organic compounds (VOCs),[1] and nitrogen oxides (NO_X), because they photochemically react to form ozone, a particularly harmful air pollutant to humans, plants, and the environment at ground level.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Specific adverse health effects on individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables such as cumulative concentrations, local meteorology and atmospheric conditions, and characteristics of exposed individuals (e.g., age, gender). Criteria pollutant precursors (VOC and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. Emissions of criteria pollutants from motor vehicles traveling to or from a project site (mobile source emissions) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be meaningfully correlated to the incremental contribution from a project.

The USEPA and CARB are both organizations that set ambient air quality standards for emissions. The following descriptions of health effects for each air pollutant associated with project construction and operation are based on information available through the USEPA (2023) and CARB (2023a).

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and NO_X react in the presence of ultraviolet light. VOCs are compounds composed primarily of hydrogen and carbon atoms generated by fuel combustion or the evaporation of paints, solvents, and other household products. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone. Ozone is also known to damage plants and materials such as rubber, plastic, and metals.

Carbon Monoxide. CO is a by-product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen monoxide with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. PM_{10} refers to particulate matter of 10-micron diameter or less. $PM_{2.5}$ refers to particulate matter of 2.5-micron diameter or less. Particulate matter in these size ranges has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Diesel particulate matter (DPM) is classified as a carcinogen by CARB.

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, major sources of lead in the air are ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other sources include waste incinerators and lead-acid battery manufacturers. The highest air concentrations of lead are usually found near lead smelters. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen.

Toxic Air Contaminants

To date, the CARB has identified 21 toxic air contaminants (TACs) and adopted the USEPA's list of 189 hazardous air pollutants as TACs. The California Health and Safety Code (Section 39655, subd. (a)) defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, industrial operations, wastewater treatment, painting operations, and dry cleaners. No ambient air quality standards exist for TACs because no exposure level has been deemed safe for humans.

In August 1998, CARB identified DPM emissions as a TAC. DPM is commonly associated with the operation of diesel equipment. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as DPM. Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is 2.5 microns or less in diameter (CARB 2023b). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2023b).

5.1.1.3 Ambient Air Quality Standards and Air Basin Attainment Classification

Air basins (or portions thereof) are classified as being in "attainment," "nonattainment," "maintenance," or "unclassified" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been achieved (refer to Section 5.1.2, *Regulatory Framework,* for further discussion on the NAAQS and CAAQS). Upon attainment of a standard for which an area was previously designated nonattainment, the area will be classified as a maintenance area. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Pure Water would be located within the Los Angeles County portion of the SCAB and, as such, is in an area designated as a nonattainment area for certain pollutants that are regulated under the Clean Air Act.

The current federal and state attainment status for the SCAB is presented in **Table 5.1-1**.

Table 5.1-1
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	Nonattainment (Extreme)[1]	Nonattainment
Ozone (8-hour)	Nonattainment (Extreme)	Nonattainment
Carbon Monoxide (CO)	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2)	Unclassifiable/Attainment	Unclassifiable/Attainment

Criteria Pollutant	Federal Designation	State Designation
Respirable Particulate Matter (PM_{10})	Attainment (Maintenance)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (Serious)[2]	Nonattainment
Lead	Nonattainment (Partial)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Sulfates	(No federal standard)	Attainment
Vinyl Chloride	(No federal standard)	Attainment
Visibility Reducing Particles	(No federal standard)	Unclassifiable/Attainment

Source: SCAQMD 2016a

Note: State and federal attainment designations may vary for the same pollutant for a variety of reasons including varying standards, averaging periods, and attainment classification requirements.

[1] 1-hour ozone standard (0.12 ppm) was revoked, effective June 15, 2005; however, SCAB has not attained this standard and is still subject to anti-backsliding requirements.

[2] The designation regarding the 2024 federal $PM_{2.5}$ NAAQS has not yet been determined.

As depicted in **Table 5.1-1**, with respect to federal air quality standards, the USEPA classifies the SCAB as in attainment for PM_{10}, CO, NO_2, and SO_2, and in nonattainment for 8-hour ozone, $PM_{2.5}$, and lead. Under state designation, the SCAB is currently in attainment for CO, NO_2, SO_2, and lead; and in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. Moreover, the SCAB is classified as an "extreme" nonattainment area for the 2015 Ozone NAAQS, which requires SCAQMD to implement significantly more stringent emission reduction plans, stricter permitting processes for new sources, additional monitoring requirements. The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. SCAQMD has divided its jurisdictional territory of the SCAB into 38 source receptor areas (SRAs) designed to provide a general representation of local meteorological, terrain, and air quality conditions in each area. The South Long Beach (station number 060374004) and Long Beach – Signal Hill (station number 060374009) monitoring stations are located approximately 6 miles east of the Joint Treatment Site, which would be the Pure Water component primarily associated with operations. **Table 5.1-2** presents a summary of the most recent (2021 through 2023) SCAQMD monitoring data for the ambient pollutant concentrations at the South Long Beach and Long Beach – Signal Hill monitoring stations.

Table 5.1-2
SOUTH LONG BEACH AND LONG BEACH – SIGNAL HILL AIR QUALITY MONITORING DATA

Pollutant	2021	2022	2023
Ozone – Long Beach – Signal Hill			
Days above 1-hour state standard (>0.09 ppm)	0	1	0
Maximum 1-hour concentration (ppm)	0.086	0.108	0.089
Days above 8-hour state/federal standard (>0.070 ppm)	0	1	0
Maximum 8-hour concentration (ppm)	0.065	0.077	0.065
Respirable Particulate Matter (PM_{10}) – South Long Beach			
Days above state standard (>50 µg/m^3)	0	0	-
Days above federal standard (>150 µg/m^3)	0	0	-
Maximum 24-hour concentration (µg/m^3)	49.7	50.3	-
Exceed annual standard (>20 µg/m^3)	Yes	Yes	-
Annual Average (µg/m^3)	24	24	-
Fine Particulate Matter ($PM_{2.5}$) – South Long Beach			
Days above federal standard (>35 µg/m^3)	4	0	-
Maximum 24-hour concentration (µg/m^3)	51.3	26.6	-
Exceed annual state standard (12 µg/m^3)	No	Yes	-
Exceed annual federal standard (9.0 µg/m^3)	Yes	Yes	-

Pollutant	2021	2022	2023
Annual Average (µg/m^3)	11.4	12.8	-
Nitrogen Dioxide (NO_2) – Long Beach – Signal Hill			
Days above state 1-hour standard (0.18 ppm)	0	0	0
Maximum 1-hour concentration (ppm)	0.059	0.058	0.056
Exceed annual state standard (0.030 ppm)	No	No	No
Exceed annual federal standard (0.053 ppm)	No	No	No
Annual Average (ppm)	0.013	0.013	0.011

Source: CARB 2025
ppm = parts per million, µg/m^3 = micrograms per cubic meter, - = insufficient data

As shown in **Table 5.1-2**, the 1- and 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards were exceeded multiple times throughout the sample period for the air basin. Data for NO_2 showed no exceedances.

5.1.1.4 Community Health Risks

Community health risks associated with TACs were evaluated in a study conducted by the SCAQMD in the SCAB. The most recent study is the Multiple Air Toxics Exposure Study V (MATES V). According to the MATES Data Visualization interactive tool, the existing cumulative cancer risk from TACs in the Pure Water area ranges from 465 in 1 million (Zip Code 91741 in the City of Glendora) to 635 in 1 million (Zip Code 90810 in the City of Long Beach). For comparison purposes, the SCAB-wide average is 455 in 1 million. The largest contributor to the existing cumulative cancer risk from TACs is DPM (SCAQMD 2022a).

5.1.2 Regulatory Framework

5.1.2.1 Federal

Federal Clean Air Act

The federal Clean Air Act regulates the emission of airborne pollutants from various mobile and stationary sources. The USEPA is responsible for enforcing the Clean Air Act of 1970 and its 1977 and 1990 Amendments. The Clean Air Act required the USEPA to establish NAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. In response, the USEPA established both primary standards and secondary standards for several criteria pollutants. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (USEPA 2024).

5.1.2.2 State

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The federal Clean Air Act allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as

federal standards. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health-protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Table 5.1-3 shows the federal and state ambient air quality standards for these pollutants.

Table 5.1-3
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	9.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	**No Federal Standards**
Sulfates	24 Hour	25 µg/sm^3	**No Federal Standards**	**No Federal Standards**
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	**No Federal Standards**	**No Federal Standards**
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	**No Federal Standards**	**No Federal Standards**

Source: CARB 2024

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Note: More detailed information of the data presented in this table can be found at the CARB website (www.arb.ca.gov).
ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide;
mg/m^3: milligrams per cubic meter; NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

State Implementation Plan

The federal Clean Air Act requires areas with unhealthy levels of ozone, PM, CO, NO_2, and SO_2 to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain the NAAQS. SIPs are not single documents—they are a compilation of new and

previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, state regulations, and federal controls. State law makes CARB the lead agency for all purposes related to the California SIP. Local air pollution control districts and other agencies prepare SIP elements for their respective jurisdictions and submit them to CARB for review and approval. CARB aggregates and forwards the SIP revisions to the USEPA for approval and publication in the Federal Register. The Code of Federal Regulations (CFR) Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items that are included in the California SIP (CARB 2023c).

5.1.2.3 Local

South Coast Air Quality Management District

SCAQMD is the regulatory agency responsible for improving air quality for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. The SCAQMD is responsible for controlling emissions, primarily from stationary sources of air pollution. These can include anything from large power plants and refineries to gas stations. Many consumer products also cause air pollutant emissions; these include house paint, furniture varnish, and thousands of products containing solvents that evaporate into the air. About 20 percent of this area's ozone-forming air pollution comes from stationary sources, both businesses and residences. The other 80 percent comes from mobile sources– mainly cars, trucks, and buses, but also construction equipment, ships, trains, and airplanes. Emission standards for mobile sources are established by state or federal agencies, such as the CARB and the USEPA, rather than by local agencies such as the SCAQMD.

SCAQMD attains and maintains air quality conditions in the SCAB through a comprehensive program of planning, regulation, permitting, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SCAQMD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution.

Air Quality Management Plan

SCAQMD is responsible for developing and adopting an AQMP, which serves as guidance to bring the region into compliance with the NAAQS and CAAQS and also constitutes this area's contribution to the California SIP. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutants, GHGs, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The most recent iteration of the AQMP, the 2022 AQMP, was adopted on December 2, 2022, and includes strategies and measures needed to meet the NAAQS (SCAQMD 2022b). The 2022 AQMP identifies that the SCAB still has high levels of ozone (smog) as a result of high NO_X emissions. In addition, on October 1, 2015, the USEPA strengthened the NAAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion. As a result, the 2022 AQMP addresses additional control strategies for meeting this more stringent standard. In order to reduce ozone levels, extensive use of zero emission technologies across all stationary and mobile sources is proposed by the 2022 AQMP. The 2022 AQMP notes an essential component to meeting the ozone NAAQS will be substantial reliance on future deployment of advanced technologies. Implementing advanced control technologies is projected to result in attainment of the ozone NAAQS by 2037 for the SCAB (SCAQMD 2022b).

Rules and Regulations

SCAQMD has also adopted a set of rules and regulations pertaining to various emissions sources. All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Rules potentially applicable to Pure Water include, but are not limited to the following:

Rule 201 – Permit to Construct: Requires written authorization from the SCAQMD's Executive Officer for any person to build, erect, install, alter or replace any equipment or agricultural permit unit, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants (SCAQMD 2004a).

Rule 203 – Permit to Operate: Requires a written permit from the Executive Officer for any person to operate or use any equipment or agricultural permit unit, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants (SCAQMD 2004b).

Rule 219 – Equipment not Requiring a Written Permit Pursuant to Regulation II: This rule's purpose is to exempt certain equipment, processes, or operations from the need for a written permit, unless they fall under specific exceptions outlined in the rule. Rule 219 covers a wide range of equipment, including mobile sources, internal combustion engines, external combustion equipment, and various other processes (SCAQMD 2023a).

Regulation IX – Standards of Performance for New Stationary Sources: Sets standards on all new sources of air pollution and all modified or reconstructed sources of air pollution (SCAQMD 2019b).

Rule 401 – Visible Emissions: Limits the allowable opacity of air contaminant emissions from any single source (SCAQMD 2001a).

Rule 402 – Nuisance: Prohibits the discharge of air contaminants, including odors, which cause injury, detriment, nuisance, or annoyance to any considerable number of persons (SCAQMD 1976).

Rule 403 – Fugitive Dust: Requires actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions, including emissions from construction activities. Project construction would be required to implement all applicable fugitive dust best available control measures specified in Table 1 in the rule (SCAQMD 2005).

Rule 431.1 – Sulfur Content of Gaseous Fuels: This rule limits the sulfur content in gaseous fuels (such as natural gas and propane) for the purpose of reducing the formation of sulfur oxides during combustion (SCAQMD 1998).

Rule 431.2 – Sulfur Content of Liquid Fuels: This rule limits the sulfur content in diesel and other liquid fuels for the purpose of both reducing the formation of sulfur oxides and particulates during combustion and enabling the use of add-on control devices for diesel-fueled internal combustion engines (SCAQMD 2000).

Rule 1110.2 – Emissions from Gaseous and Liquid Fueled Engines: The purpose of Rule 1110.2 is to reduce NO_X, VOCs, and CO from engines. This rule applies to all stationary and portable engines over 50 rated brake horsepower (SCAQMD 2023c).

Rule 1113 – Architectural Coating: Establishes VOC limits for architectural coatings (e.g., paints, stains, coatings). Building interior and exterior paint is limited to a maximum VOC content of 50 grams per liter (SCAQMD 2016b).

Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil: This rule requires that an approved mitigation plan be obtained from SCAQMD prior to commencing excavation, grading, handling, storage, or treatment of VOC-contaminated soil (SCAQMD 2001b).

Rule 1171 – Solvent Cleaning Operations: The purpose of this rule is to reduce emissions of VOCs, TACs, and stratospheric ozone-depleting or global-warming compounds from the use, storage, and disposal of solvent and cleaning materials in solvent cleaning operations and activities (SCAQMD 2009a).

Rule 1179 – Publicly Owned Treatment Works Operations: The purpose of this rule is to reduce emissions of VOCs and odorous compounds from Publicly Owned Treatment Works Operations (SCAQMD 1992).

Regulation XIII –New Source Review: This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors (SCAQMD 2021a).

Rule 1401 – New Source Review of Toxic Air Contaminants: This rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units that emit toxic air contaminants. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203 (SCAQMD 2017).

Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities: This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials. The requirements for demolition and renovation activities include asbestos surveying, notification, removal procedures and time schedules, material handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (SCAQMD 2007).

Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants: This rule applies to any owner or operator conducting earth-moving activities of soil with applicable TACs as defined in the rule that have been identified as contaminants of concern at a site. The provisions of the rule include ambient PM_{10} monitoring, dust control measures, notification, signage, and recordkeeping requirements (SCAQMD 2021b).

Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and other Compression Ignition Engines: This rule specifies fuel additive and operational requirements to reduce emissions from stationary compression ignition engine sources (SCAQMD 2021c).

Rule 1472 – Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines: The purpose of this rule is to reduce DPM emissions from facilities with three or more stationary emergency standby diesel-fueled internal combustion engines (SCAQMD 2008).

Regulation XXX – Title V Permits: The Title V Permit system is the air pollution control permit system required to implement the federal Operating Permit Program as required by Title V of the federal Clean Air Act as amended in 1990 and to implement requirements for GHGs pursuant to 40 CFR Part 70. This regulation defines permit application and issuance procedures as well as compliance requirements associated with the program (SCAQMD 2020).

Assembly Bill 617 – Community Air Protection Program

California's Assembly Bill (AB) 617 (Chapter 136, Statutes of 2017) directed CARB, in conjunction with local air districts, to establish the Community Air Protection Program. Specifically, AB 617 directed CARB and the local air pollution control districts to actively engage with members of heavily impacted communities, follow their guidance, and address local criteria air pollutant and TAC sources of concern through a variety of strategies including incentives. On May 23, 2019, CARB approved the *Community Air Protection Incentives 2019 Guidelines*, which contain criteria and eligibility for incentives supporting AB 617.

In 2018, the communities of Wilmington, West Long Beach, and Carson were nominated by the SCAQMD and selected by CARB as AB 617 monitoring communities so that these communities may develop emissions reduction strategies and monitor the effectiveness of those strategies.

An associated Community Emissions Reduction Plan was finalized in September 2019 (SCAQMD 2019a). The Community Emissions Reduction Plan is considered a critical part of implementing AB 617 and outlines actions and commitments to reduce air pollution in the community. It was developed in partnership and collaboration with the community, local land use agencies, and public health agencies that serve the community. The community identified refineries, ports, neighborhood truck traffic (primarily related to port activities), oil drilling and production, and railyards as priority air pollutant sources, along with a concern for reducing exposure to air pollution at schools, childcare centers, and homes. Emission reduction targets for NO_x, VOC, sulfur oxides, and DPM are identified based on identified emission reduction measures.

5.1.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to air quality. Pure Water would have a significant impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;

3. Expose sensitive receptors to substantial pollutant concentrations; or

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SCAB. **Table 5.1-4** presents the current significance thresholds, including regional daily thresholds for short-term construction and long-term operational emissions; maximum incremental cancer risk and HIs for TACs; and maximum ambient concentrations for exposure of sensitive receptors. A project with daily emission rates, risk values, or concentrations below these thresholds is generally considered to have a less-than-significant effect on air quality.

Table 5.1-4
SCAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction	Operation
Mass Daily Thresholds (pounds per day)		
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3
Toxic Air Contaminants Thresholds		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Ambient Air Quality Standards for Criteria Pollutants		
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm	
CO	1-hour average ≥ 20.0 ppm (state) 8-hour average ≥ 9.0 ppm (state/federal)	
PM_{10}	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation) Annual average ≥ 1.0 µg/m^3	
$PM_{2.5}$	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation)	
SO_2	1-hour average ≥ 0.075 ppm 24-hour average ≥ 0.04 ppm	

Source: SCAQMD 2023d
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SO_X = sulfur oxides; TACs = toxic air contaminants; GHG = greenhouse gas; MT/yr = metric tons per year; CO_2e = carbon dioxide equivalent; NO_2 = nitrogen dioxide; ppm = parts per million; µg/m^3 = micrograms per cubic meter

5.1.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

AQ-EC-1 **Diesel Engine Idling.** Idling for a vehicle's primary diesel engine shall be restricted to five minutes or less at any location, except as allowed by California Air Resources Board (CARB) regulation: Title 13 California Code of Regulations (CCR), Division 3, Chapter 10, Section 2485.

AQ-EC-2 **Fugitive Dust Control.** The contractor shall comply with South Coast Air Quality Management District (SCAQMD) Rule 403 (Fugitive Dust), including implementing the Best Available Control Measures (BACM) listed in Table 1 of Rule 403 for all construction activities, the BACM listed in Table 2 of Rule 403 for large operations (50 or more acres of disturbed surface area or earth moving operations of 5,000 cubic yards/day for more than 3 days), and the Contingency Control Measures in Table 3 of Rule 403 when wind speeds, including instantaneous gusts, exceed 25 miles per hour.

5.1.5 Impact Analysis

5.1.5.1 Topic 1: Consistency with Air Quality Plans

Would Pure Water conflict with or obstruct implementation of the applicable air quality plan?

Program-Level Analysis

Pursuant to the federal Clean Air Act, the SCAQMD is required to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. The 2022 AQMP, prepared by the SCAQMD for the region, contains strategies to achieve emissions reductions. Also included in the 2022 AQMP are the Southern California Association of Governments (SCAG) growth forecasts that are used to project trends over a 20-year period to identify regional transportation strategies to address mobility needs. These growth forecasts form the basis for the land use and transportation control portions of the AQMP. Based on SCAQMD guidance (SCAQMD 1993), consistency with the AQMP is determined based on the following two criteria:

- Whether the proposed project would exceed the growth assumptions in the AQMP; and
- Whether the proposed project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

In regard to the exceedance of growth assumptions, Pure Water does not have a residential component and would not result in regional population growth (as further described in Chapter 8, *Other CEQA Considerations*). The proposed improvements would provide a local source of water for the region, serving the existing and planned populations. Pure Water would not result in population increases and, therefore, would not exceed the growth projection assumptions in the AQMP. Workers for Pure Water would be recruited from the local pool of labor and would not create employment growth exceeding

growth estimates for the area. The proposed improvements would serve existing and planned development and would not create conditions for the creation of new housing, which would thereby induce population growth. Because Pure Water would not generate population growth beyond the levels assumed for the region, it is considered consistent with the growth assumptions in region's AQMP.

The SCAB is in nonattainment for criteria pollutants PM_{10} and $PM_{2.5}$ and ozone precursors VOC and NO_X. Construction and operation of Pure Water's facilities and components would result in emissions of these criteria pollutants and precursors. While emissions of criteria pollutants PM_{10} and $PM_{2.5}$ would not exceed thresholds during construction and/or concurrent construction and operations, emissions of VOC and NO_X are expected to exceed thresholds temporarily during construction and/or concurrent construction and operations of the project-level components. Operational period (once all construction is complete) emissions of pollutants for which the SCAB is in nonattainment (VOC, NO_X, PM_{10}, and $PM_{2.5}$) would be below SCAQMD thresholds (as described in Section 5.1.5.2, below). Further, Pure Water's operational facilities would be compliant with applicable stationary source control measures included in the AQMP. However, because Pure Water would result in emissions of VOC and NO_X (for which the SCAB is in nonattainment) during temporary construction and/or concurrent construction and operations that are expected to exceed thresholds, Pure Water would have the potential to result in an increase in the frequency or severity of existing air quality violations or delay the timely attainment of air quality standards specified in the AQMP. Pure Water would therefore have the potential to conflict with or obstruct implementation of the AQMP, and impacts are considered **potentially significant.**

Project-Level Analysis

The project-level components are part of the overall Pure Water program; therefore, information and analysis presented above under *Program-Level Analysis* are also applicable to the components evaluated at the project level. No additional analysis is required.

5.1.5.2 Topic 2: Criteria Pollutant Emissions

Would Pure Water result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

Program-Level Analysis

The SCAB is in nonattainment for ozone precursors VOC and NO_X, PM_{10}, and $PM_{2.5}$. Construction and operation of Pure Water's facilities and components would result in criteria pollutant emissions. Construction emissions would primarily be generated from off-road equipment exhaust, on-road vehicle exhaust, and fugitive dust (e.g., from grading/site preparation activities). Operational emissions would primarily be generated from stationary sources (e.g., backup generators) at treatment facilities and pump stations, and mobile sources (e.g., employee commute trips, material delivery trips). Criteria pollutant emissions associated with the project-level components, for which sufficient information is available to calculate emissions, are presented below under *Project-Level Analysis.* Criteria pollutant emissions associated with components not currently analyzed at the project level for this air quality analysis would be estimated and assessed once more Pure Water component details are available. As disclosed below under *Project-level Analysis*, criteria pollutant emissions of VOC, NO_X, and CO are expected to exceed thresholds during temporary construction and/or concurrent construction and

operations of the project-level components. Construction and operation of the additional components not analyzed at the project level would also have the potential to occur simultaneously with construction and/or operation of the project-level components and contribute to the exceedance of thresholds. As such, impacts are considered **potentially significant**.

Project-Level Analysis

Project-level emissions were estimated for both project construction and operation using a variety of established and accepted models and methods. Pump station and Joint Treatment Site construction period emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a computer model developed by the California Air Pollution Control Officers Association (CAPCOA), in collaboration with the California air quality management and pollution control districts, used to estimate air emissions resulting from land development projects (CAPCOA 2022). Emissions associated with construction of the backbone pipeline were estimated using CARB's Mobile Source Emissions Inventory. Emissions that would be generated by off-road equipment (e.g., excavators, loaders, cranes) were estimated using CARB's Offroad emissions inventory database (OFFROAD2021 v1.0.2). OFFROAD2021 was used to develop air basin-specific equipment emission factors for each piece of anticipated off-road equipment to be used for construction and/or operation. Emissions from worker commute, haul truck, and vendor delivery motor vehicles were calculated by multiplying the emission factors that were compiled running CARB's EMFAC2021 v1.0.2 model by the estimated vehicle trips and vehicle miles travelled (VMT) for each type of vehicle expected to be used for Pure Water. Details of construction period modeling for all components can be found in Appendix B.

Operational sources of criteria pollutants and precursors include backup emergency generators located at each of the pump stations and the Joint Treatment Site, process emissions from the MBR and sidestream centrate treatment system, and mobile source emissions from worker/visitor commute and vendor delivery motor vehicles. Calculations of emissions for the emergency generators were based on the proposed usage rates and USEPA Tier 4 emissions factors. VOC emissions generated by the MBR and sidestream centrate were provided by the health risk assessment prepared for the Joint Treatment Site by Ramboll Americas Engineering Solutions, Inc. (Ramboll 2024; see Appendix B). Emissions from motor vehicles were calculated by multiplying the emission factors that were compiled running CARB's EMFAC2021 v1.0.2 model by the estimated vehicle trips and VMT for each type of vehicle expected to be used. Details on the Project emissions calculations and model input and output are provided in Appendix B.

Construction Emissions

Construction would result in temporary increases in air pollutant emissions. These emissions would include exhaust emissions generated from both off-road equipment operating onsite and on-road vehicles traveling off site as well as fugitive dust emissions generated by material handling activities such as soil excavation and export.

Multiple project-level components were assumed to be constructed between December 2025 and February 2036 for conservative modeling purposes[2]. Individual components include the Joint Treatment Site, the backbone pipeline, the Whittier Narrows Pump Station, and the Santa Fe Pump Station. These

[2] The anticipated schedule for Pure Water construction and operation was delayed after the initiation of air quality modeling efforts. As a result, the analysis reflects an earlier construction period than currently planned, making it conservative. With advancing state regulations, including stricter emissions standards and cleaner equipment requirements, actual project emissions could be lower than those estimated in the modeling.

components are anticipated to be constructed in two phases. Phase 1 includes all eight reaches of the backbone pipeline. Components of each phase are depicted in **Table 5.1-5** below. Construction of the individual components is anticipated to overlap to various degrees throughout the construction period. The following discussion provides results of the construction period analysis for each of the components individually before considering the potential overlap of component construction activities and emissions. Peak daily construction emissions and a comparison with SCAQMD thresholds are provided below under *Summary of Construction Emissions,* following the emission results of individual components. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, actual emissions could be reduced because of: (1) a more modern and cleaner-burning construction equipment fleet mix would be available for deployment than what is assumed at this juncture in the Pure Water development; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). Additional detail on the methodology and assumptions for the construction emissions modeling, including schedule, activities, and equipment, is available in Appendix B.

Table 5.1-5
PURE WATER PHASING ASSUMPTIONS FOR AIR QUALITY ANALYSIS

Program Component	Construction Schedule[1]	Operations Start Date
Phase 1		
Initial Delivery		
AWP Facility and Ancillary Facilities (approx. +30 MGD)	2025 through 2030	2030
Workforce Training Center		
Backbone Conveyance System (Reaches 1-2)		
Continuation of Phase 1		
AWP Facility and Ancillary Facilities (approx. +85 MGD)	2027 through 2032	2032
Warren Facility Improvements		
Backbone Conveyance System (Reaches 3-8)		
Phase 2		
AWP Facility and Ancillary Facilities (+35 MGD)	2032 through 2036	2036
DPR Treatment at AWP Facility		

[1]The anticipated schedule for Pure Water construction and operation was delayed after the initiation of air quality modeling efforts. As a result, the analysis reflects an earlier construction period than currently planned, making it conservative. With advancing state regulations, including stricter emissions standards and cleaner equipment requirements, actual project emissions could be lower than those estimated in the modeling.

Joint Treatment Site

Construction would require the use of equipment throughout the Joint Treatment Site for the full term of construction. Construction would be completed in two phases (with the first phase including an Initial Delivery Subphase), generally encompassing clearing, hazardous soils removal, excavation, building construction, and paving. Clearing and demolition would result in approximately 53,705 cubic yards of debris to be hauled away. The volume of mass excavation would be approximately 552,000 cubic yards of soil for Phase 1 and approximately 154,000 cubic yards for Phase 2. It is assumed that 20 percent of

the soil excavated would be classified as hazardous and require export for disposal at a Class II landfill assumed to be 200 miles from the site. The rest of the excavated soil would be reused onsite.

Table 5.1-6 presents the maximum anticipated daily emissions by construction activity.

Table 5.1-6
UNMITIGATED JOINT TREATMENT SITE CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase 1: 30 MGD (Initial Delivery)						
Clear & Grub, Utility Relocation, Demo & Waste Haul Off	1.98	18.65	13.87	0.05	8.55	2.04
Hazardous Soils Removal	1.07	15.28	13.59	0.06	2.52	0.92
Mass Excavation & Haul Off	3.53	26.19	31.89	0.09	2.20	1.11
Structural Excavation and Foundation Prep	0.79	6.26	9.34	0.02	0.63	0.32
Yard Piping	0.67	4.26	6.78	0.02	0.30	0.19
Above Grade Facilities, Equipment, and Site Improvements	3.39	32.36	29.12	0.07	1.25	1.15
Roofing & Exterior Cladding	0.33	3.04	2.79	0.01	0.13	0.12
Paving & Striping	1.25	8.27	11.85	0.03	0.85	0.43
Phase 1: Additional 85 MGD (115 MGD Total)						
Above Grade Facilities, Equipment, and Site Improvements	3.77	31.82	32.07	0.09	1.21	1.11
Roofing & Exterior Cladding	0.32	2.71	2.76	0.01	0.12	0.11
Paving & Striping	0.92	7.77	11.14	0.03	0.64	0.37
Storm Drain Culvert Relocation	0.11	0.99	1.82	0.00	0.06	0.04
Phase 2: Additional 35 MGD (150 MGD Total)						
Hazardous Soils Removal	0.82	5.17	10.24	0.02	0.57	0.25
Structural Excavation and Foundation Prep	0.64	4.32	9.11	0.02	0.51	0.21
Yard Piping	0.54	2.66	6.09	0.02	0.21	0.13
Process Equipment and Above Grade Process Piping Installation	1.21	7.78	13.56	0.03	0.30	0.28
Roofing & Exterior Cladding	0.16	1.11	1.88	0.01	0.05	0.05
Paving	0.83	5.62	10.53	0.03	0.23	0.21

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; MGD = million gallons per day

Backbone Conveyance System

Backbone Pipeline

Construction of the backbone pipeline would require the use of multiple construction methods, including both open trench and trenchless approaches, across eight reaches. Each construction method would also employ a variety of construction activities as work progresses. Trenching is anticipated to be the primary construction method used along the majority of the backbone alignment. The open trenching construction method involves excavation within existing roadways (Roadways Construction Method [CM]) and within easements (SCE Easement CM and LACFCD Easement CM), to install the pipe. Excavated soils would be stockpiled and backfilled/recompacted after the pipe installation. Trenching

within easements is more often located in areas that are generally unpaved. Pipe jacking (Pipe Jacking CM [7-foot] and Pipe Jacking CM [9-foot]) would be used where the backbone pipeline would traverse beneath certain obstacles such as roadways or waterways. Pipe jacking involves the excavation of pits on each end of the obstacle, from which the pipeline would be installed. Tunneling using microtunneling (Microtunneling CM), traditional tunneling (Traditional Tunneling CM [7-foot] and Traditional Tunneling CM [9-foot]), or shield tunneling (Shield Tunneling CM) techniques would be required for longer stretches of pipeline where trenching or pipe jacking cannot occur. Tunneling would require the excavation of a large pit, within which tunneling equipment would be lowered.

The results of the calculations for backbone pipeline off-road construction equipment by construction method are shown in **Table 5.1-7**. The data are presented as the maximum anticipated daily emissions for each method.

Table 5.1-7
UNMITIGATED BACKBONE PIPELINE OFF-ROAD CONSTRUCTION EMISSIONS BY CONSTRUCTION METHOD

Construction Method	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Roadways CM	8.55	60.00	75.06	0.20	2.49	2.29
SCE Easement CM	8.65	56.99	73.00	0.20	2.45	2.25
LACFCD Easement CM	8.65	56.99	73.00	0.20	2.45	2.25
Pipe Jacking CM (7-foot)	4.40	23.88	34.38	0.12	1.15	1.06
Microtunneling CM	5.46	49.21	39.96	0.15	1.50	1.38
Traditional Tunneling CM (7-foot)	4.24	23.35	32.36	0.10	1.14	1.05
Pipe Jacking CM (9-foot)	4.37	24.82	35.22	0.12	1.14	1.05
Shield Tunneling CM	4.21	23.16	33.83	0.11	1.11	1.02
Traditional Tunneling CM (9-foot)	4.21	23.44	32.18	0.10	1.13	1.04

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; CM = Construction Method; SCE = Southern California Edison; LACFCD = Los Angeles County Flood Control District

On-road emissions and fugitive dust from material handling would vary by construction method, and also by pipeline reach due to the varying reach lengths, soil and debris hauling requirements, material delivery and water truck requirements, and worker requirements. The results of the calculations for backbone pipeline on-road construction trips and fugitive dust by reach and construction method are shown in **Table 5.1-8**. The data are presented as the maximum anticipated daily emissions for each method.

Table 5.1-8
UNMITIGATED BACKBONE PIPELINE ON-ROAD AND FUGITIVE DUST CONSTRUCTION EMISSIONS BY REACH AND METHOD

Reach	Construction Method	Pollutant Emissions (pounds/day)					
		VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
1	Roadways CM	0.89	14.66	14.14	0.15	1.72	0.67
	Pipe Jacking CM (7-foot)	0.23	1.78	5.96	0.03	0.28	0.11
	Microtunneling CM	0.14	1.04	3.57	0.02	0.17	0.06
2	Roadways CM	0.70	11.51	11.11	0.12	1.34	0.53
	Pipe Jacking CM (7-foot)	0.03	0.17	0.60	0.00	0.03	0.01
	Microtunneling CM	0.31	1.74	8.15	0.04	0.31	0.12
3	Roadways CM	0.38	7.08	5.19	0.07	0.86	0.32
	SCE Easement CM	0.38	7.08	5.19	0.07	0.86	0.32
	LACFCD Easement CM	0.38	7.08	5.19	0.07	0.86	0.32
	Pipe Jacking CM (7-foot)	0.08	0.56	1.93	0.01	0.09	0.03
	Microtunneling CM	0.09	0.51	2.10	0.01	0.09	0.03
4	Roadways CM	0.15	2.51	2.31	0.03	0.37	0.13
	LACFCD Easement CM	0.15	2.51	2.31	0.03	0.37	0.13
	Microtunneling CM	0.02	0.10	0.43	0.00	0.02	0.01
	Traditional Tunneling CM (7-foot)	0.08	0.62	2.04	0.01	0.10	0.04
5	Roadways CM	0.77	13.09	11.81	0.13	1.54	0.60
	SCE Easement CM	0.77	13.09	11.81	0.13	1.54	0.60
	Pipe Jacking CM (7-foot)	0.07	0.51	1.74	0.01	0.08	0.03
	Microtunneling CM	0.11	0.77	2.81	0.01	0.12	0.05
	Traditional Tunneling CM (7-foot)	0.09	0.64	2.20	0.01	0.10	0.04
6	Traditional Tunneling CM (9-foot)	0.23	1.95	5.77	0.03	0.31	0.12
7	Roadways CM	0.64	11.14	9.31	0.11	1.31	0.51
	SCE Easement CM	0.64	11.14	9.31	0.11	1.31	0.51
	Shield Tunneling CM	0.17	1.14	4.30	0.02	0.19	0.07
	Traditional Tunneling CM (9-foot)	0.26	1.76	6.77	0.03	0.30	0.11
8	Roadways CM	0.90	11.55	11.91	0.11	1.24	0.48
	SCE Easement CM	0.90	11.55	11.91	0.11	1.24	0.48
	LACFCD Easement CM	0.90	11.55	11.91	0.11	1.24	0.48
	Pipe Jacking CM (9-foot)	0.57	3.76	14.84	0.07	0.64	0.24
	Shield Tunneling CM	0.19	0.88	5.00	0.02	0.17	0.06

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; CM = Construction Method; SCE = Southern California Edison; LACFCD = Los Angeles County Flood Control District

Backbone Pump Stations

Construction of the backbone pump stations is expected to require demolition, site preparation, grading, building construction, paving, and architectural coating.

The results of the calculations for construction of the Santa Fe Pump Station and Whittier Narrows Pump Station are shown in **Table 5.1-9**. The data are presented as the maximum anticipated daily emissions by construction activity.

Table 5.1-9
UNMITIGATED BACKBONE PUMP STATION CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Santa Fe Pump Station						
Demolition	2.25	23.48	21.02	0.06	5.57	1.62
Site Preparation	3.05	27.61	29.49	0.06	9.39	5.12
Grading	1.58	16.40	19.56	0.05	4.45	2.15
Building Construction	0.94	8.39	12.88	0.02	0.26	0.24
Paving	0.77	5.45	9.50	0.01	0.43	0.22
Architectural Coatings	0.09	0.77	1.10	0.00	0.01	0.01
Whittier Narrows Pump Station						
Demolition	2.26	23.94	21.20	0.06	6.01	1.70
Site Preparation	3.05	27.61	29.49	0.06	9.39	5.12
Grading	1.58	16.40	19.56	0.05	4.45	2.15
Building Construction	0.94	8.39	12.88	0.02	0.26	0.24
Paving	0.77	5.45	9.50	0.01	0.43	0.22
Architectural Coatings	0.09	0.77	1.10	0.00	0.01	0.01

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less

Summary of Construction Emissions

For analysis purposes, the Joint Treatment Site was assumed to be constructed between December 2025 and February 2036 and the backbone pipeline was assumed to be constructed between October 2026 through April 2031. The Whittier Narrows Pump Station was assumed to be constructed between November 2029 and March 2032, and the Santa Fe Pump Station was assumed to be constructed between November 2029 and April 2032. As such, construction of individual project-level components is anticipated to overlap to various degrees throughout the construction period. The results of the calculations for overlapping construction activities are shown in **Table 5.1-10**. The data are presented as the maximum anticipated daily emissions by year for comparison with SCAQMD thresholds. The peak daily construction emissions would occur in 2030 when 6 reaches of the 39-mile backbone pipeline alignment are conservatively assumed to be active, concurrent with construction activities at the Whittier Narrows Pump Station, the Santa Fe Pump Station, and the Joint Treatment Site.

Table 5.1-10
UNMITIGATED PEAK DAILY CONSTRUCTION EMISSIONS SUMMARY

Year	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2025	1.98	18.65	13.87	0.05	8.55	2.03
2026	25.21	204.88	234.65	0.86	21.28	9.81
2027	41.37	300.82	373.25	1.26	15.68	12.07
2028	40.92	297.03	366.57	1.25	15.16	11.85

Year	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2029	60.89	455.05	520.40	1.66	36.93	25.25
2030	93.07	534.79	660.68	2.35	38.89	26.72
2031	55.89	318.37	413.54	1.41	15.75	12.63
2032	15.52	91.00	138.24	0.41	5.23	3.96
2033	2.39	14.75	28.77	0.06	1.02	0.62
2034	2.02	13.06	24.05	0.06	0.51	0.47
2035	1.17	7.14	13.48	0.03	0.26	0.24
2036	1.14	6.86	13.45	0.03	0.24	0.23
Maximum Daily Emissions	**93.07**	**534.79**	**660.68**	**2.35**	**38.89**	**26.72**
SCAQMD Significance Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***Yes***	***Yes***	***Yes***	***No***	***No***	***No***

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-10**, maximum daily emissions associated with construction of the project-level components would exceed the SCAQMD daily significance thresholds for VOC, NO_X, and CO. Construction of the project-level components would therefore result in a **potentially significant impact**.

Operational Emissions

Joint Treatment Site

Stationary sources of air pollutant emissions located at the Joint Treatment Site would include eight diesel backup generators and treatment process emissions from the membrane bioreactor (MBR) and sidestream centrate treatment. The operations for regular testing/maintenance of the generators would result in exhaust emissions. The MBR and sidestream centrate treatment would result in emissions of VOCs. Mobile source emissions would be generated by worker/visitor commute and vendor delivery motor vehicle trips. Additional details are provided in Appendix B.

Operational emissions generated at the Joint Treatment Site are shown in **Table 5.1-11**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-11
JOINT TREATMENT SITE OPERATIONAL EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Stationary – Generators	0.97	3.45	17.94	0.03	0.15	0.15
Stationary – Treatment Process VOCs	5.26	-	-	-	-	-
Mobile	0.41	2.26	6.77	0.06	0.50	0.18
Total	**6.63**	**5.71**	**24.71**	**0.10**	**0.65**	**0.33**

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less

Backbone Conveyance System

Backbone Pipeline

Following construction, the backbone pipeline itself would not generate emissions. There would be some minimal ongoing maintenance activities associated with the pipeline, such as patrolling and inspections, but emissions generated would be negligible.

Backbone Pump Stations

Operation of the Santa Fe Pump Station and Whittier Narrows Pump Station is expected to involve a storage tank, 25-foot-tall building, surge suppression system, perimeter security fencing, potentially an electrical substation and a standby generator, power poles, and paved areas on sites ranging from 4 acres to 10 acres. If a standby generator is required, criteria pollutant emissions would be generated by regular testing. Operational emissions generated by the pump stations are shown in **Table 5.1-12**. The data are presented as the maximum anticipated daily emissions by source type. It should be noted there would be occasional trips made by workers visiting the pump station sites for ongoing operations and maintenance; however, these trips would be minimal, thereby resulting in negligible daily emissions.

Table 5.1-12
BACKBONE PUMP STATION OPERATIONAL EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Stationary – Standby Generators	0.06	0.13	1.17	<0.01	0.01	0.01

Note: Modeling data are provided in Appendix B

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less

Summary of Operational Emissions

Combined total operational emissions generated by the project-level components are shown in **Table 5.1-13**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-13
PROJECT-LEVEL OPERATIONAL EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Joint Treatment Site Stationary	6.22	3.45	17.94	0.03	0.15	0.15
Joint Treatment Site Mobile	0.41	2.26	6.77	0.06	0.50	0.18
Backbone Pump Station Stationary	0.06	0.13	1.17	<0.01	0.01	0.01
Total Operational Emissions	**6.69**	**5.84**	**25.88**	**0.10**	**0.66**	**0.33**
SCAQMD Significance Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-13**, maximum daily emissions associated with operation of the project-level components would not exceed the SCAQMD daily significance thresholds. Operation of the project-level components would therefore result in a **less-than-significant impact**.

Concurrent Construction and Operational Emissions

As depicted in **Table 5.1-5**, construction and operation of the project-level components are expected to occur in two phases. An initial delivery component as part of Phase 1 is proposed to be operational in 2030. Upon completion of the initial delivery component, construction of Phase 1 would continue at the Joint Treatment Site to produce approximately 115 MGD of purified water, and the remainder of the backbone pipeline and associated pump stations would also be completed. Phase 1 is anticipated to be complete by late 2032. Upon completion of Phase 1, construction of Phase 2 would continue, involving the expansion of the AWP Facility to purify up to a total of 150 MGD. Due to this anticipated phasing, it is expected that operation of the initial delivery component of Phase 1 may occur concurrently with construction of the remainder of Phase 1 in 2031 and that operation of Phase 1 may occur concurrently with construction of Phase 2 in 2032. The following discussion presents the concurrent construction and operational emissions during these periods of overlap for comparison with the SCAQMD daily thresholds for operations, which are more restrictive than the construction-period thresholds, and therefore more conservative.

Concurrent Initial Delivery Operations and Phase 1 Construction

Combined total initial delivery operational emissions and Phase 1 construction emissions for calendar year 2031 (the year that initial delivery operations commence and occur concurrently with Phase 1 construction) are shown in **Table 5.1-14**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-14
CONCURRENT INITIAL DELIVERY OPERATIONS AND PHASE 1 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Initial Delivery Operations						
Joint Treatment Site Stationary	6.22	3.45	17.94	0.03	0.15	0.15
Backbone Pump Station Stationary	-	-	-	-	-	-
Mobile	0.13	0.67	2.13	0.02	0.11	0.04
Subtotal Operations	6.35	4.12	20.07	0.05	0.26	0.19
Phase 1 Ongoing Construction	55.89	318.37	413.54	1.41	15.75	12.63
TOTAL	**62.24**	**322.49**	**433.61**	**1.46**	**16.01**	**12.82**
SCAQMD Significance Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***Yes***	***Yes***	***No***	***No***	***No***	***No***

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-14**, maximum daily emissions associated with concurrent initial delivery operations and ongoing construction would exceed the SCAQMD daily significance thresholds for VOC and NO_X. Concurrent emissions would therefore result in a **potentially significant impact**.

Concurrent Phase 1 Operations and Phase 2 Construction

Combined total Phase 1 operational emissions and Phase 2 ongoing construction emissions for calendar year 2032 (the year that Phase 1 operations commence and occur concurrently with Phase 2 construction) are shown in **Table 5.1-15**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-15
CONCURRENT PHASE 1 OPERATIONS AND PHASE 2 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase 1 Operations						
Joint Treatment Site Stationary	6.22	3.45	17.94	0.03	0.15	0.15
Backbone Pump Station Stationary	0.06	0.13	1.17	0.00	0.01	0.01
Mobile	0.34	1.77	5.38	0.05	0.32	0.12
Subtotal Operations	6.62	5.36	24.49	0.08	0.48	0.27
Phase 2 Ongoing Construction	15.52	91.00	138.24	0.41	5.23	3.96
TOTAL	**22.14**	**96.36**	**162.73**	**0.50**	**5.70**	**4.23**
SCAQMD Significance Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***No***	***Yes***	***No***	***No***	***No***	***No***

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-15**, maximum daily emissions associated with concurrent Phase 1 operations and ongoing Phase 2 construction would exceed the SCAQMD daily significance threshold for NO_X. Concurrent emissions would therefore result in a **potentially significant impact**.

5.1.5.3 Topic 3: Sensitive Receptors

Would Pure Water expose sensitive receptors to substantial pollutant concentrations?

Program-Level Analysis

Construction and operation of Pure Water's facilities and components would have the potential to result in impacts to sensitive receptors through exposure to criteria pollutants, CO hotspots, and TACs. As assessed in detail below under *Project-Level Analysis*, construction and operation of the project-level components would not result in significant impacts to sensitive receptors. Because impacts to sensitive receptors are localized (i.e., resulting from construction or operation at a single location as opposed to from the combination of multiple components at multiple locations) and because construction and operation of the components not analyzed at the project level are relatively less intensive as compared to the project-level components (such as DPR, recharge, service connections, etc.), program-level impacts are considered **less than significant**.

Project-Level Analysis

Construction Activities

Criteria Pollutants

As part of the SCAQMD's Environmental Justice program, more attention has been focused on localized air quality effects. Also, while regional impact analysis is based on attaining or maintaining regional emissions standards, localized impact analysis compares the concentration of a pollutant at a receptor site to a health-based standard.

SCAQMD has developed a localized significance threshold (LST) methodology and mass rate look-up tables by SRA that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. LSTs identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated; they are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2009b). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance, and the location within the SCAB. If emissions are less than the LSTs, they would not exceed the ambient air quality standards ensuring that emissions would not adversely affect public health and welfare. Site acreage is determined based on the area disturbed and, where CalEEMod is used to quantify emissions, the equipment assumed. The LST methodology is recommended for projects of 5 acres or less in size and to avoid the need for complex dispersion modeling. For projects that exceed 5 acres, the 5-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis. This approach is conservative as it assumes that all onsite emissions would occur within a 5-acre area and over-predicts potential localized impacts (i.e., more pollutant emissions occurring within a smaller area and within closer proximity to potential sensitive receptors). If a project exceeds the LST look up values, then the SCAQMD recommends that project specific localized air quality modeling be performed.

The AWP Facility would be located on a 56-acre site in SRA 4 with single-family homes located approximately 130 feet to the south across Lomita Boulevard. Therefore, the LSTs in SRA 4 for project sites of 5 acres with receptors located within 50 meters (164 feet) are used for determining localized significance of AWP Facility construction emissions. The approximately 39-mile backbone pipeline would pass through SRAs 4, 5, 9, and 11 and portions would be adjacent to existing sensitive receptors. Therefore, the most conservative LSTs for project sites of 2 acres with receptors located within 25 meters (82 feet) in SRAs 4, 5, 9, and 11 are used for determining localized significance of backbone pipeline construction emissions. The Whittier Narrows Pump Station would be located on an approximately 4.2-acre disturbed site in SRA 11. Because the exact site has not been selected, the pump station's proximity to sensitive receptors is not known. Therefore, LSTs in SRA 11 for project sites of less than 5 acres with receptors located within 25 meters (82 feet) are used for determining localized significance of the Whittier Narrows Pump Station construction emissions. The Santa Fe Spreading Grounds Pump Station would be located on an approximately 4.2-acre disturbed site in SRA 9. Therefore, the LSTs in SRA 9 for project sites of less than 5 acres with receptors located within 25 meters (82 feet) are used for determining localized significance of the Santa Fe Spreading Grounds Pump Station construction emissions. Construction of these multiple components would occur concurrently at multiple sites across the 39-mile backbone pipeline alignment; but it is unlikely that a single sensitive receptor would be exposed to emissions from more than one site.

When quantifying mass emissions for localized analysis, only emissions that occur onsite are considered. Emissions related to offsite delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these do not contribute to emissions generated on a project site (refer to Appendix B for additional detail on the LST methodology).

Joint Treatment Site

The Joint Treatment Site would be located on a 56-acre site in SRA 4 with single-family homes located approximately 130 feet to the south across Lomita Boulevard. Therefore, the LSTs in SRA 4 for project sites of 5 acres with receptors located within 50 meters (164 feet) are used for determining localized significance of Joint Treatment Site construction emissions. The results of the calculations for onsite emissions generated during construction at the Joint Treatment Site are shown in **Table 5.1-16**. The data are presented as the maximum anticipated daily onsite construction emissions by year.

Table 5.1-16
UNMITIGATED ONSITE JOINT TREATMENT SITE CONSTRUCTION EMISSIONS

Year	Pollutant Emissions (pounds/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
2025	15.77	12.21	7.79	1.81
2026	54.45	60.90	10.70	3.43
2027	45.41	46.79	2.02	1.69
2028	38.61	38.05	1.50	1.38
2029	70.84	74.01	2.75	2.53
2030	37.06	42.49	1.45	1.34
2031	30.25	33.58	1.18	1.08
2032	6.13	11.58	0.47	0.25
2033	19.66	37.90	1.27	0.78
2034	16.66	31.69	0.66	0.61
2035	7.14	13.48	0.26	0.24
2036	6.86	13.45	0.25	0.23
Maximum Daily Onsite Emissions	**70.84**	**74.01**	**10.70**	**3.43**
SCAQMD LST Thresholds	*118*	*1,982*	*42*	*10*
Exceed LST?	***No***	***No***	***No***	***No***

Note: Modeling data are provided in Appendix B

NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold

As shown in **Table 5.1-16**, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. Therefore, construction at the Joint Treatment Site would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors.

Backbone Pipeline

Construction of the backbone pipeline would occur concurrently at multiple sites across the 39-mile alignment; however, it is unlikely that a single sensitive receptor would be exposed to emissions from more than one site. The backbone pipeline would pass through SRAs 4, 5, 9, and 11 and portions would likely be adjacent to existing sensitive receptors. Therefore, the most conservative LSTs for project sites

of up to 2 acres with receptors located within 25 meters (82 feet) in SRAs 4, 5, 9, and 11 are used for determining localized significance of backbone pipeline construction emissions. The results of the calculations for backbone pipeline onsite construction emissions by construction method are shown in **Table 5.1-17**. The data are presented as the maximum anticipated daily construction emissions for each method for comparison with the SCAQMD's LST levels.

Table 5.1-17
UNMITIGATED BACKBONE PIPELINE ONSITE CONSTRUCTION EMISSIONS BY CONSTRUCTION METHOD

Construction Method	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Roadways CM	60.00	75.06	2.49	2.29
SCE Easement CM	56.99	73.00	2.45	2.25
LACFCD Easement CM	56.99	73.00	2.45	2.25
Pipe Jacking CM (7-foot)	23.88	34.38	1.15	1.06
Microtunneling CM	49.21	39.96	1.50	1.38
Traditional Tunneling CM (7-foot)	23.35	32.36	1.14	1.05
Pipe Jacking CM (9-foot)	24.82	35.22	1.14	1.05
Shield Tunneling CM	23.16	33.83	1.11	1.02
Traditional Tunneling CM (9-foot)	23.44	32.18	1.13	1.04
Maximum Daily Emissions	**60.00**	**75.06**	**2.49**	**2.29**
SCAQMD LST Thresholds	*82*	*842*	*7*	*4*
Exceed LST?	***No***	***No***	***No***	***No***

Note: Modeling data are provided in Appendix B

NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; CM = Construction Method; SCE = Southern California Edison; LACFCD = Los Angeles County Flood Control District; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold

As shown in **Table 5.1-17**, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. Therefore, construction of the backbone pipeline would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors.

Backbone Pump Stations

The Whittier Narrows Pump Station would be located on an approximately 4.2-acre disturbed site in SRA 11. The Santa Fe Pump Station would be located on an approximately 4.2-acre disturbed site in SRA 9. Because the exact sites have not been selected, the pump stations' proximity to sensitive receptors is not known. Therefore, LSTs in SRA 11 for project sites of less than 5 acres with receptors located within 25 meters (82 feet) are used for determining localized significance of the Whittier Narrows Pump Station construction emissions and LSTs in SRA 9 for project sites of less than 5 acres with receptors located within 25 meters (82 feet) are used for determining localized significance of the Santa Fe Pump Station construction emissions. The results of the calculations for onsite backbone pump station construction emissions are shown in **Table 5.1-18**. The data are presented as the maximum anticipated daily emissions by construction activity for comparison with the SCAQMD's LST levels.

Table 5.1-18
UNMITIGATED ONSITE BACKBONE PUMP STATION CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Santa Fe Pump Station				
Demolition	18.59	18.47	4.15	1.19
Site Preparation	25.93	28.43	8.76	4.94
Grading	12.62	17.34	3.28	1.81
Building Construction	8.39	12.88	0.26	0.24
Paving	5.40	8.77	0.17	0.16
Architectural Coatings	0.77	1.10	0.01	0.01
Maximum Daily Onsite Emissions	**25.93**	**28.43**	**8.76**	**4.94**
SCAQMD LST Thresholds	*203*	*1,733*	*14*	*8*
Exceed LST?	***No***	***No***	***No***	***No***
Whittier Narrows Pump Station				
Demolition	18.59	18.47	4.47	1.24
Site Preparation	25.93	28.08	8.76	4.94
Grading	12.62	17.34	3.28	1.81
Building Construction	8.39	12.88	0.26	0.24
Paving	5.49	8.78	0.18	0.16
Architectural Coatings	0.77	1.10	0.01	0.01
Maximum Daily Onsite Emissions	**25.93**	**28.08**	**8.76**	**4.94**
SCAQMD LST Thresholds	*183*	*1,814*	*12*	*9*
Exceed LST?	***No***	***No***	***No***	***No***

Note: Modeling data are provided in Appendix B

NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold

As shown in **Table 5.1-18**, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. Therefore, construction of the backbone pump stations would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors.

Carbon Monoxide Hot Spots

On- and off-road motor vehicle exhaust is the primary source of CO. In an urban setting, the highest CO concentrations are generally found close to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (e.g., congested intersection) increases. Construction-generated traffic has the potential of contributing to localized "hotspots" of CO offsite. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections. Because CO disperses rapidly, hotpots are most likely to occur in areas with limited vertical ambient air mixing such as tunnels, long underpasses, or below-grade roadways.

Construction activities would result in lane closures and add construction vehicle traffic to roadways around the various components, which could add to existing roadway congestion in urban areas causing intersection delays. However, implementation of a Traffic Control Plan (TCP) and/or a Traffic Management Plan (TMP) per **TRA-EC-1** would ensure that temporary construction traffic would not

substantially increase congestion so that CO hotspots would not even form. Therefore, construction activities would not result in exposure of sensitive receptors to substantial concentrations of CO.

Exposure to Toxic Air Contaminants

Implementation of the project-level components would result in the use of heavy-duty construction equipment, haul trucks, onsite generators, and construction worker vehicles. These vehicles and equipment could generate the TAC DPM. Generation of DPM from construction projects typically occurs in a localized area (e.g., at the project site) for a short period of time. Because construction activities and subsequent emissions vary depending on the phase of construction (e.g., grading, building construction), the construction-related emissions to which nearby receptors are exposed would also vary throughout the construction period. During some equipment-intensive phases such as grading, construction-related emissions would be higher than other less equipment-intensive phases such as building construction. Concentrations of mobile-source DPM emissions are typically reduced by 70 percent at approximately 500 feet from the source (CARB 2005).

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has to the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments (HRAs) are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from the Office of Environmental Health Hazard Assessment [OEHHA]) and are best suited for evaluation of long-duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is consistent long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015).

In addition to the lack of specific guidance on addressing construction period health risks from potential exposure to TACs, it is important to note that construction activities would occur at various locations and varying intensities along the 39-mile backbone pipeline alignment. Construction of the pump stations would be completed over an approximately 28-month period with only 6 months assumed for the most intensive activities of demolition, site preparation, and grading. Similarly, construction of the backbone pipeline would occur for short durations at various locations along the 39-mile alignment such that a single sensitive receptor would not be exposed to pollutants for extended periods of time.

Construction at the Joint Treatment Site would occur on a single 56-acre site over approximately 11 years; however, construction period TAC emissions generated would be less than those generated during Joint Treatment Site operations. Operational sources of TACs at the Joint Treatment Site include the MBR, sidestream centrate treatment, onsite idling and travel of chemical delivery trucks, and the eight 4-MW diesel-powered generators. The DPM released by the eight generators alone would exceed the DPM released during construction at the Joint Treatment Site. The operational period HRA accounted for 1.21 pounds of DPM per day from the eight emergency generators combined. The maximum daily DPM generated during construction has been estimated to be 0.53 pound per day. Furthermore, the construction period estimate includes both onsite construction equipment and offsite truck travel. The majority of construction period DPM is generated by offsite truck travel with emissions occurring a substantial distance from the site such that their emissions would not cumulatively affect a

receptor near the Joint Treatment Site and would therefore be excluded from the HRA. As such, the construction estimate is conservative. Nevertheless, a construction period HRA would yield results that are less than those for the operational period given the lower emission rates and reduced exposure period. As detailed below, an operational HRA was conducted, and impacts were found to be less than significant**.**

Considering this information, the highly dispersive nature of DPM, and the fact that construction activities would occur at various locations and varying intensities throughout the construction site, it is not anticipated that construction of Pure Water would expose sensitive receptors to substantial DPM concentrations.

Summary of Construction Impacts to Sensitive Receptors

As described above, Pure Water's project-level components would not expose sensitive receptors to substantial pollutant concentrations during construction and impacts would therefore be **less than significant.**

Operational Activities

Criteria Pollutants

SCAQMD has developed the LST methodology that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts from onsite emissions of NO_X, CO, PM_{10} and $PM_{2.5}$. The backup emergency generators would be the only onsite emissions sources of these pollutants. The backup emergency generators are generally tested on a monthly basis and would only be used during power failures. As shown previously in **Table 5.1-13**, peak daily emissions associated with testing of the backup emergency generators would result in stationary source NO_X emissions of 3.45 pounds per day at the Joint Treatment Site and 0.13 pounds per day at the backbone pump stations. Emissions of these rates are substantially less than the LSTs ranging from 123 to 203 pounds of NO_X per day for the applicable SRAs. Stationary source CO emissions would be 17.94 pounds per day at the Joint Treatment Site and 1.17 pounds per day at the backbone pump stations. Emissions at these rates are substantially less than the LSTs ranging from 1,480 to 1,814 pounds of CO per day for the applicable SRAs. Operational PM_{10} and $PM_{2.5}$ emissions from stationary sources would be less than one pound per day (see **Table 5.1-13**), which is less than the LSTs of 4 pounds of PM_{10} and 2 pounds of $PM_{2.5}$ per day. As discussed previously, due to the anticipated phasing of construction, it is expected that operation of the initial delivery component of Phase 1 may occur concurrently with construction of the remainder of Phase 1 in 2031 and that operation of Phase 1 may occur concurrently with construction of Phase 2 in 2032; however, it is unlikely that a single sensitive receptor would be located within 25 meters and exposed to emissions from both construction and operational sources as construction would not occur in the same location as the operational emissions sources. Therefore, operation of the project-level components would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants.

Carbon Monoxide Hot Spots

The project-level components are estimated to result in an increase of 266 average daily trips (ADT), expressed as roundtrips. The roadway network surrounding the Joint Treatment Site, including Lomita Boulevard, Main Street, and Sepulveda Boulevard, currently has traffic volumes ranging from 16,770 to 24,799 ADT (Kalibrate Technologies 2018). The anticipated increase of 266 ADT represents

approximately one percent of the existing ADT. The addition of 266 ADT would not be substantial enough to affect the flow of local intersections, which could potentially cause CO hotspots. Therefore, operational activities would not result in exposure of sensitive receptors to substantial concentrations of CO.

Exposure to Toxic Air Contaminants

Operation of the Joint Treatment Site would result in the emissions of TACs from the treatment of water through the MBR and the sidestream centrate treatment, testing/operation of the emergency backup generators, and exhaust of diesel trucks. An HRA was prepared that estimated the incremental excess cancer risk and chronic and acute HIs for the Joint Treatment Site (Ramboll 2024). The incremental excess cancer risk is an estimate of the chance a person exposed to a specific source of a TAC may have of developing cancer from that exposure beyond the individual's risk of developing cancer from existing background levels of TACs in the ambient air. Cancer risk estimates do not mean, and should not be interpreted to mean, that a person will develop cancer from estimated exposures to toxic air pollutants. Health risks associated with chronic and acute effects from TAC exposure are quantified using the maximum HI. An HI is the potential exposure to a substance divided by the reference exposure level (the level at which no adverse effects are expected). An HI of less than one indicates no adverse health effects are expected from the potential exposure to the substance. The maximum HI is the sum of HIs for pollutants with non-cancer health effects that have the same or similar adverse health effects. As shown in **Table 5.1-19**, health risks at the maximum exposed individual resident and the maximum exposed individual worker would be below SCAQMD significance thresholds. Therefore, the Joint Treatment Site would not expose sensitive receptors to substantial concentrations of TACs.

Table 5.1-19
HEALTH RISK ASSESSMENT RESULTS

Receptor	Cancer (per million)	Chronic HI	8-Hour Chronic HI	Acute HI
Maximum Exposed Individual Resident	0.96	0.0002	0.0001	0.002
Maximum Exposed Individual Worker	1.0	0.04	0.04	0.027
SCAQMD Significance Thresholds	*10*	*1*	*1*	*1*
Potentially Significant Impact?	***No***	***No***	***No***	***No***

Source: Ramboll 2024HI = hazard index; SCAQMD = South Coast Air Quality Management District

Summary of Operational Impacts to Sensitive Receptors

As described above, Pure Water's project-level components would not expose sensitive receptors to substantial pollutant concentrations during operations and impacts would therefore be **less than significant.**

5.1.5.4 Topic 4: Other Emissions

Would Pure Water result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Program-Level Analysis

Construction

CARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Construction activities are not a typical source of nuisance odors, although construction could result in minor amounts of odorous compounds associated with diesel heavy equipment exhaust, asphalt paving, or evaporation of volatile compounds within paint or other coatings.

The smell of diesel exhaust is due in most part to the presence of sulfur and the creation of hydrocarbons during combustion (Nett Technologies 2020). As shown in **Table 5.1-10**, construction would not result in significant emissions of sulfur oxides. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. Additionally, construction equipment associated with Pure Water's components would be operating at various locations throughout the Pure Water area and would not take place all at once. Therefore, construction activities would not result in other emissions, such as those leading to odors adversely affecting a substantial number of people. Impacts associated with construction would be **less than significant**.

Operation

Operation of the proposed influent pump station, screening facility, dewatering facility, and MBR system would have the potential to result in odorous emissions, including sulfides, organic odors, and VOCs, at the Joint Treatment Site. However, the facilities would include odor control systems, as necessary, to address odorous emissions. The odor control system proposed at the Joint Treatment Site is discussed below under *Project-Level Analysis.* Operation of other program-level components would not have the potential to cause other emissions, such as those leading to odors adversely affecting a substantial number of people. Impacts associated with operational odors would be **less than significant**.

Project-Level Analysis

Construction

The information and analysis presented under *Program-Level Analysis* are also applicable to the components evaluated at the project level. Construction activities would not result in other emissions, such as those leading to odors adversely affecting a substantial number of people; therefore, impacts associated with construction would be **less than significant**.

Operation

As mentioned above, Joint Treatment Site facilities, including the influent pump station, screening facility, dewatering facility, and MBR system, would have the potential to result in odorous emissions

such as sulfides, organic odors, and VOCs. The Joint Treatment Site would include covers for tanks with the potential for odor (such as the MBR tanks). Air ducts would be connected to these covered tanks and blowers would move odorous air from the tanks to air treatment units which would include bio trickling filters and activated carbon scrubbers. This process would eliminate the potential for odors to be generated through the operations of the AWP Facility. In addition, the Joint Treatment Site facilities would be required to comply with SCAQMD Rule 402 – Nuisance, which prohibits the discharge of air contaminants, including odors, which cause injury, detriment, nuisance, or annoyance to any considerable number of persons. As such, the project-level components would not result in significant objectionable odors and impacts would be **less than significant**.

5.1.6 Level of Significance Before Mitigation

Impacts related to consistency with air quality plans and to criteria pollutant and precursor emissions would be **potentially significant** for temporary construction (for VOC, NO_X, and CO; refer to **Table 5.1-10**) as well as for concurrent construction and operations (for VOC and NO_X; refer to **Tables 5.1-14** and **5.1-15**). Impacts related to criteria pollutant and precursor emissions during operations, sensitive receptors, and other emissions (such as odors) would be **less than significant**.

5.1.7 Mitigation Measures

The following mitigation measures would be required to address potentially significant impacts associated with consistency with air quality plans and emissions of criteria pollutants and precursors.

AQ-MM-1 **Tier 4 Final Off-Road Construction Equipment.** All diesel-fired construction equipment, equal to or greater than 25 horsepower shall meet U.S. Environmental Protection Agency (USEPA) Tier 4 Final standards at a minimum.

AQ-MM-2 **Alternative Fuel Construction Equipment.** As practical, on- and off-road vehicles and equipment shall be electrically powered or utilize other alternative fuels.

AQ-MM-3 **Onsite Power Sources.** If available, the contractor shall use existing onsite power sources (e.g., power poles) or renewable fuel generators rather than diesel generators.

AQ-MM-4 **Electric Vehicle Charging Stations.** Prior to completion of Phase 1 Pure Water construction activities at the Joint Treatment Site, a minimum of 12 electric vehicle charging stations shall be installed at the existing compressed natural gas fueling station owned and operated by the Sanitation Districts at the Warren Facility.

5.1.8 Level of Significance After Mitigation

As described above, impacts related to criteria pollutant and precursor emissions during operations, sensitive receptors, and other emissions (such as odors) would be **less than significant without mitigation**. Impacts related to consistency with air quality plans and to criteria pollutant and precursor emissions would be **potentially significant** for temporary construction (for VOC, NO_X, and CO) as well as the concurrent construction and operations (for VOC and NO_X), requiring the implementation of mitigation. The mitigation proposed aims to reduce emissions from both construction and operations because impacts would occur during concurrent activity. The reduction of emissions of criteria pollutants and precursors for which the SCAB is in nonattainment (ozone, PM_{10}, and $PM_{2.5}$) would also address potentially significant impacts related to consistency with air quality plans.

Measure **AQ-MM-1** would reduce emissions of VOC, NO_X, PM_{10}, and $PM_{2.5}$ associated with construction equipment exhaust. Measures **AQ-MM-2** and **AQ-MM-3** would reduce emissions of all pollutants generated by construction equipment exhaust. However, the extent to which these measures would be feasible to implement at the time of construction is unknown at this time. Measure **AQ-MM-4** would reduce emissions associated with on-road vehicles powered by fossil fuels. Though this measure would provide infrastructure to allow for the increased use of electric vehicles, it would be too speculative to estimate the usage of said infrastructure. Therefore, measures **AQ-MM-2** through **AQ-MM-4** are not quantified in the analysis that follows, resulting in a conservative assessment of mitigated emissions.

5.1.8.1 Construction

Implementation of mitigation measure **AQ-MM-1** would reduce the project-level components' construction period emissions. The results of the calculations for overlapping construction activities with mitigation are shown in **Table 5.1-20**. The data are presented as the maximum anticipated daily emissions by year for comparison with SCAQMD thresholds.

Table 5.1-20
MITIGATED PEAK DAILY CONSTRUCTION EMISSIONS

Year	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2025	0.39	4.51	19.48	0.05	7.79	1.34
2026	12.94	51.83	265.14	0.86	14.87	3.94
2027	22.97	53.28	391.72	1.26	5.37	2.60
2028	22.85	52.81	384.54	1.25	5.01	2.53
2029	30.86	75.50	557.30	1.66	21.94	11.16
2030	41.99	94.52	683.92	2.35	20.79	10.10
2031	26.30	50.45	435.83	1.41	4.67	2.46
2032	8.58	12.99	144.38	0.41	1.70	0.73
2033	0.86	4.76	41.03	0.06	0.62	0.25
2034	0.76	4.38	35.68	0.06	0.25	0.17
2035	0.45	2.64	20.36	0.03	0.10	0.10
2036	0.45	2.64	20.36	0.03	0.10	0.10
Maximum Daily Emissions	**41.99**	**94.52**	**683.92**	**2.35**	**21.94**	**11.16**
SCAQMD Significance Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***No***	***No***	***Yes***	***No***	***No***	***No***

Note: Modeling data are provided in Appendix B
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-20**, maximum daily emissions of VOC and NO_X would be reduced to a level less than the SCAQMD daily significance thresholds. However, maximum daily emissions of CO would increase slightly and remain in exceedance of the SCAQMD daily significance threshold. This slight increase is a byproduct of using higher tier equipment to reduce emissions of VOC, NO_X, and PM, which are the pollutants for which the SCAB is in nonattainment. There is no feasible mitigation available for the reduction of CO emissions associated with the construction activities. Therefore, although the SCAB is in attainment for CO, construction of the project-level components is conservatively considered to result in a **significant and unavoidable impact** related to regional CO emissions.

5.1.8.2 Concurrent Initial Delivery Operations and Phase 1 Construction

Combined total initial delivery operational emissions and mitigated Phase 1 construction emissions for calendar year 2031 (the year that initial delivery operations commence and occur concurrently with Phase 1 construction) are shown in **Table 5.1-21**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-21
CONCURRENT INITIAL DELIVERY OPERATIONS AND MITIGATED PHASE 1 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Initial Delivery Operations						
Joint Treatment Site Stationary	6.22	3.45	17.94	0.03	0.15	0.15
Backbone Pump Station Stationary	-	-	-	-	-	-
Mobile	0.13	0.67	2.13	0.02	0.11	0.04
Subtotal Operations	6.35	4.12	20.07	0.05	0.26	0.19
Phase 1 Ongoing Construction with Mitigation	26.30	50.45	435.83	1.41	4.67	2.46
TOTAL	**32.65**	**54.58**	**455.90**	**1.46**	**4.93**	**2.65**
SCAQMD Significance Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-21**, maximum daily emissions associated with concurrent initial delivery operations and mitigated Phase 1 construction would not exceed the SCAQMD daily significance thresholds. Concurrent emissions would therefore result in a **less-than-significant impact with mitigation**.

5.1.8.3 Concurrent Phase 1 Operations and Phase 2 Construction

Combined total Phase 1 operational emissions and mitigated Phase 2 construction emissions for calendar year 2032 (the year that Phase 1 operations commence and occur concurrently with Phase 2 construction) are shown in **Table 5.1-22**. The data are presented as the maximum anticipated daily emissions by source type.

Table 5.1-22
CONCURRENT PHASE 1 OPERATIONS AND MITIGATED PHASE 2 CONSTRUCTION EMISSIONS

Source	Pollutant Emissions (pounds/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase 1 Operations						
Joint Treatment Site Stationary	6.22	3.45	17.94	0.03	0.15	0.15
Backbone Pump Station Stationary	0.06	0.13	1.17	0.00	0.01	0.01
Mobile	0.34	1.77	5.38	0.05	0.32	0.12
Subtotal Operations	6.62	5.36	24.49	0.08	0.48	0.27
Phase 2 Ongoing Construction with Mitigation	8.58	12.99	144.38	0.41	1.70	0.73
TOTAL	**15.20**	**18.35**	**168.87**	**0.50**	**2.18**	**1.00**
SCAQMD Significance Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Potentially Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Notes: Modeling data are provided in Appendix B. Totals may not add due to rounding.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SCAQMD = South Coast Air Quality Management District

As shown in **Table 5.1-22**, maximum daily emissions associated with concurrent Phase 1 operations and Phase 2 construction would not exceed the SCAQMD daily significance thresholds. Concurrent emissions would therefore result in a **less-than-significant impact with mitigation**.

5.1.8.4 Conclusion

With implementation of mitigation, construction emissions of criteria pollutants and ozone precursors for which the SCAB is in nonattainment (VOC, NO_X, PM_{10}, and $PM_{2.5}$) would be below applicable thresholds of significance. As a result, Pure Water would not conflict with or obstruct implementation of the 2022 AQMP, and impacts would be **less than significant with mitigation**.

Construction emissions of CO would exceed the applicable threshold of significance even with the implementation of mitigation. Although the SCAB is in attainment for CO, construction CO emissions are conservatively considered to result in a **significant and unavoidable** impact in relation to regional/SCAB CO emissions.

Impacts associated with criteria pollutant emissions during Pure Water operations, sensitive receptors, and other emissions (such as odors) would be **less than significant** with no mitigation required.

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5.2 BIOLOGICAL RESOURCES

This section addresses the potential biological resources impacts of Pure Water. The following discussion includes a description of existing conditions; a summary of applicable laws and regulations; and an evaluation of potential impacts with and without mitigation. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

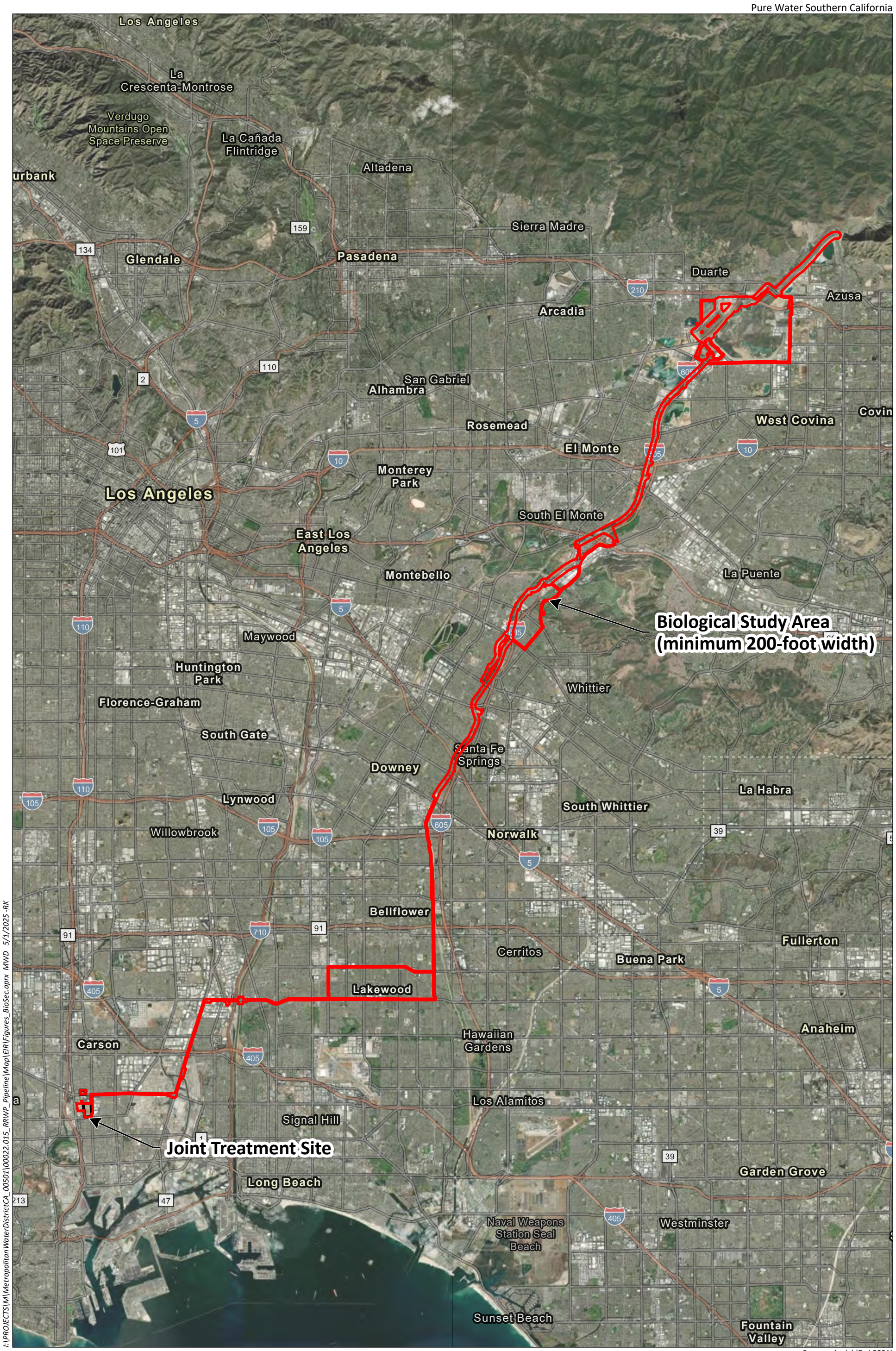
The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

BIOLOGICAL RESOURCES LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is primarily based on readily available, general information derived from applicable resources and planning documents, previous biological studies where available, and more specific biological information for certain program-level facilities and components with known locations as discussed in Section 5.2.1.2.

The discussion and analysis in this section related to the project-level facilities and components are based on the Biological Resources Technical Report prepared for the Joint Treatment Site and backbone pipeline (HELIX 2025; Appendix C). Information included in the Biological Resources Technical Report was obtained through a literature review related to biological resources, a general biological survey of the Biological Study Area (BSA)[1] as shown on **Figure 5.2-1**, focused biological surveys, vegetation mapping, and a jurisdictional delineation.

[1] The BSA includes the Joint Treatment Site and backbone pipeline, in addition to an approximate 100-foot buffer on each side of the backbone alignment (representing a minimum 200-foot wide BSA corridor along the length of the backbone alignment). Note, the BSA buffer was extended up to 500 feet on the side of the backbone alignment for portions of the backbone alignment that would be trenched and abut habitat with potential to support special-status animal species.



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Source: Aerial (Esri 2021)

0 2.5 Miles

PUREWATER SOUTHERN CALIFORNIA

Biological Study Area

Figure 5.2-1

5.2.1 Existing Conditions

5.2.1.1 Methodology

Literature Review

Biological studies for the program were conducted to assess potential impacts to biological resources associated with Pure Water. Existing biological conditions were identified via review of relevant maps, databases, and literature pertaining to biological resources known to occur within the Pure Water area and recent and historical aerial imagery, USGS topographic maps, soils maps (Natural Resource Conservation Service 2022), and other maps to obtain information on the natural environmental setting. In addition, a query of special-status species and habitats databases was conducted, including the USFWS species records (USFWS 2022a), CDFW California Natural Diversity Database (CNDDB; CDFW 2022), Calflora database (Calflora 2022), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2022), and USFWS National Wetlands Inventory (USFWS 2022b), collectively referred to as a literature review. The. Recorded locations of species, habitat types, wetlands, and other resources were mapped and overlain onto aerial imagery using Geographic Information Systems. Citizen science databases, such as iNaturalist (2024), eBird (2022), and Bumble Bee Watch (2024), were also reviewed to obtain general information on reported observations of special-status species within the Pure Water area.

In addition, previous biological studies and reports completed along the upper reach of the San Gabriel River for Metropolitan's San Gabriel Tower and Improvements Project (Aspen Environmental Group [Aspen] 2021a and 2021b) were also reviewed and considered as part of the analysis related to program-level facilities and components and changes in discharges at USG-3.

Program-level Studies

In addition to the literature review discussed above, a general biological survey was completed by HELIX in 2023 for certain program-level components (**Table 5.2-1**). These components include Metropolitan service connections at PM-26 (Little Dalton Wash), CENB-48 (San Dimas Wash), USG-3 (San Gabriel River), and the Santa Fe Dam Spillway where changes in the operational water deliveries are proposed. The general biological survey included mapping vegetation and assessing the potential for special-status species to occur within the Discharge Study Area at these locations. The Discharge Study Areas include the service connection and undeveloped downstream areas within the banks of the affected watercourse, where these areas do not overlap with the BSA for the backbone pipeline. The USG-3 Discharge Study Area and methods for the lower reach of the San Gabriel River (between the San Gabriel Canyon Spreading Grounds and I-210) and Santa Fe Dam Spillway overlap with the backbone alignment; therefore, these areas are discussed below under *Project-level Studies*.

As part of the program-level studies, focused species surveys for least Bell's vireo (LBVI; *Vireo bellii pusillus*) also were conducted by HELIX along San Dimas Wash in 2023, as detailed in **Table 5.2-1**.

Table 5.2-1
BIOLOGICAL SURVEYS CONDUCTED FOR THE DISCHARGE STUDY AREAS

Survey Type	Survey Area[1]	Survey Date(s)
General Biological Survey and Vegetation Mapping	PM-26: Little Dalton Wash	March 20, 2023
	CENB-48: San Dimas Wash	March 20, 2023
	USG-3: Upper reach of San Gabriel River (between Morris Dam and San Gabriel Spreading Grounds)	June 12 – 13, 2023
Least Bell's Vireo Surveys	CENB-48: San Dimas Wash	April 27, 2023
		May 8, 2023
		May 19, 2023
		May 30, 2023
		June 14, 2023
		June 26, 2023
		July 7, 2023
		July 17, 2023

[1] The Discharge Study Areas in this table include the service connection and undeveloped downstream areas within the banks of the affected watercourse, where these areas do not overlap with the BSA for the backbone pipeline.

Project-level Studies

Biological studies were conducted to assess potential impacts to biological resources associated with project-level facilities and components. Existing site-specific biological conditions for these facilities and components were considered within a BSA that included the Joint Treatment Site and backbone alignment, in addition to an approximate 100-foot buffer on each side of the backbone alignment (representing a minimum 200-foot wide BSA corridor along the length of the backbone alignment) (**Figure 5.2-2**). For portions of the backbone alignment that would be trenched and abut habitat with potential to support special-status animal species, the buffer was extended up to 500 feet on the side of the backbone alignment where those resources occurred.

A general biological survey of the BSA, for the purpose of mapping vegetation and assessing the potential for special-status species to occur, was conducted by HELIX between 2022 and 2024. A jurisdictional delineation of facilities and components located within or adjacent to potential jurisdictional aquatic resources was conducted in 2022. Rare plant surveys; focused surveys for southwestern pond turtle (*Actinemys pallida*), coastal California gnatcatcher (CAGN; *Polioptila californica californica*), LBVI, southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*), and Crotch's bumble bee (*Bombus crotchii*); and habitat assessments for burrowing owl (BUOW; *Athene cunicularia*) and bats, were conducted between 2022 and 2024, as detailed in **Table 5.2-2**.

San Gabriel Canyon SEA
Puente Hills SEA
Rio Hondo College Wildlife Sanctuary SEA
Puente Hills SEA
San Gabriel Canyon Spreading Grounds
USG-3
PM-26
CENB-48
F.E. Weymouth WTP
Santa Fe Dam Spillway
Santa Fe Spreading Grounds
Rio Hondo and San Gabriel Coastal Spreading Grounds
West Coast Groundwater Basin Injection Wells
Central Groundwater Basin Injection Wells
Joint Treatment Site
Los Angeles County
Orange County
210
10
60
57
5
605

Spreading Facilities/Injection Wells
Weymouth WTP
Joint Treatment Site
Backbone Alignment
Asuza Pipeline Retrofit
DPR Pipeline
Metropolitan Service Connection
Significant Ecological Area (SEA)
Significant Ecological Areas (Ordinance Applies)
Significant Ecological Areas (Incorporated City - Ordinance Does Not Apply)

0 3.5 Miles

Source: Aerial (Esri 2022)

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PUREWATER SOUTHERN CALIFORNIA

Regional Context

Figure 5.2-2

Table 5.2-2
BIOLOGICAL SURVEYS FOR PROJECT-LEVEL FACILITIES AND COMPONENTS

Survey Type	Survey Area	Survey Date
General Biological Surveys and Vegetation Mapping	BSA[1]	March 10, 2022
		March 16 – 17, 2022
		April 5 – 7, 2022
		July 11, 2022
		March 20, 2023
		January 15, 2024
Jurisdictional Delineation	BSA[1]	August 2, 2022
		August 3, 2022
Rare Plant Survey	BSA[1]	May 5, 2022
		May 6, 2022
		May 12, 2022
		June 20, 2022
		June 21, 2022
		June 22, 2022
		July 5, 2022
		May 9, 2023
		June 14, 2023
		April 23, 2024
		June 5, 2024
Southwestern Pond Turtle Survey	San Jose Creek & San Gabriel River Upstream of San Jose Creek Confluence	May 24, 2022
		June 20, 2022
	San Gabriel River Downstream of San Jose Creek Confluence	May 25, 2022
		June 21, 2022
Coastal California Gnatcatcher Survey	Survey Area 1a – North San Gabriel Canyon Spreading Grounds	April 26, 2022
		May 3, 2022
		May 10, 2022
		May 17, 2022
		May 24, 2022
		May 31, 2022
	Survey Area 1b – North San Gabriel Canyon Spreading Grounds	May 4, 2022
		May 11, 2022
		May 18, 2022
		May 25, 2022
		June 1, 2022
		June 16, 2022
	Survey Area 2 – Irwindale Avenue	April 28, 2022
		May 5, 2022
		May 12, 2022
		May 19, 2022
		May 26, 2022
		June 2, 2022

Table 5.2-2 (cont.)
BIOLOGICAL SURVEYS FOR PROJECT-LEVEL FACILITIES AND COMPONENTS

Survey Type	Survey Area	Survey Date
	Survey Area 3 – Sycamore Canyon Trailhead	April 28, 2022
		May 5, 2022
		May 12, 2022
		May 19, 2022
		May 26, 2022
		June 2, 2022
	Survey Area 4 – Del Amo Boulevard	April 28, 2022
		May 5, 2022
		May 12, 2022
		May 19, 2022
		May 26, 2022
		June 2, 2022
	Survey Area 5 – Live Oak Avenue	May 5, 2022
		May 12, 2022
		May 19, 2022
		May 26, 2022
		June 2, 2022
		June 10, 2022
	Survey Area 6 – South San Gabriel Canyon Spreading Grounds	May 19, 2022
		May 27, 2022
		June 3, 2022
		June 10, 2022
		June 17, 2022
		June 28, 2022
	Survey Area 7a – Santa Fe Spreading Grounds	May 19, 2022
		May 27, 2022
		June 3, 2022
		June 10, 2022
		June 17, 2022
		June 28, 2022
	Survey Area 7b – Santa Fe Spreading Grounds	May 9, 2022
		May 16, 2022
		May 23, 2022
		June 6, 2022
		June 13, 2022
		June 20, 2022
	Santa Fe Dam Spillway	May 11, 2023
		May 18, 2023
		May 25, 2023
		June 1, 2023
		June 15, 2023
		June 23, 2023
Least Bell's Vireo Surveys	Survey Area 1a – San Gabriel Canyon Spreading Grounds[2]	May 17, 2022
		June 1, 2022
		June 14, 2022
		June 28, 2022
		July 8, 2022

Table 5.2-2 (cont.)
BIOLOGICAL SURVEYS FOR PROJECT-LEVEL FACILITIES AND COMPONENTS

Survey Type	Survey Area	Survey Date
	Survey Area 1b – San Gabriel Canyon Spreading Grounds[2]	May 18, 2022
		June 2, 2022
		June 15, 2022
		June 29, 2022
		July 12, 2022
	Survey Area 2a – San Gabriel River/San Jose Creek[2]	May 24, 2022
		June 8, 2022
		June 20, 2022
		July 5, 2022
		July 15, 2022
	Survey Area 2b – San Gabriel River/San Jose Creek[2]	May 25, 2022
		June 9, 2022
		June 21, 2022
		July 6, 2022
		July 16, 2022
	Unnamed Tributary to San Gabriel River (between Peck Road and Rose Hills Road)	April 27, 2023
		May 8, 2023
		May 19, 2023
		May 30, 2023
		June 14, 2023
		June 26, 2023
		July 7, 2023
		July 17, 2023
	San Gabriel River between Whittier Boulevard and Slauson Avenue	April 22, 2024
		May 3, 2024
		May 15, 2024
		May 28, 2024
		June 10, 2024
		June 21, 2024
		July 3, 2024
		July 22, 2024
Southwestern Willow Flycatcher Surveys	Survey Area 1a – San Gabriel Canyon Spreading Grounds	May 17, 2022
		June 1, 2022
		June 14, 2022
		June 28, 2022
		July 8, 2022
	Survey Area 1b – San Gabriel Canyon Spreading Grounds	May 18, 2022
		June 2, 2022
		June 15, 2022
		June 29, 2022
		July 12, 2022
	Survey Area 2a – San Gabriel River/San Jose Creek	May 24, 2022
		June 8, 2022
		June 20, 2022
		July 5, 2022
		July 15, 2022

Table 5.2-2 (cont.)
BIOLOGICAL SURVEYS FOR PROJECT-LEVEL FACILITIES AND COMPONENTS

Survey Type	Survey Area	Survey Date
	Survey Area 2b – San Gabriel River/San Jose Creek	May 25, 2022
		June 9, 2022
		June 21, 2022
		July 6, 2022
		July 16, 2022
Burrowing Owl Habitat Assessments	BSA[1]	July 12, 2022
		July 13, 2022
		June 14, 2023
		June 5, 2024
Bat Habitat Assessment	BSA[1]	April 19, 2023
		April 20, 2023
Crotch's bumble bee surveys	San Gabriel River north of I-210 and Santa Fe Dam Spillway	May 2, 2024
		June 10, 2024
		July 2, 2024
		July 22, 2024
		August 14, 2024

[1] Surveys were conducted where potential direct and/or indirect impacts would occur to these resources or species, and where appropriate habitat occurred.

[2] LBVI is known to occur along San Gabriel River within the BSA. As such, focused surveys for LBVI along San Gabriel River followed a modified protocol survey effort consisting of five survey visits along portions of the backbone alignment with the greatest potential to support LBVI based on the presence of extensive riparian habitat in order to provide updated status and location of LBVI.

5.2.1.2 Regional Context

The Pure Water area is located within the Los Angeles Basin, which is a flat plain situated between the Santa Monica, Santa Susana, San Gabriel, and Santa Ana Mountains, the Palos Verdes Peninsula, and the Pacific Ocean. The climate of the Los Angeles region varies by location but is generally classified as a Mediterranean climate, with warm, dry summers, and mild, wet winters.

Los Angeles County supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Representative habitats within the county include beaches, tidal marshes, and lagoons along the coast; coastal sage scrub, chaparral, grassland, riparian scrub and forests, oak woodlands, and freshwater lakes (both natural and artificial) throughout the lowlands and foothills; mixed chaparral, oak woodlands, and coniferous forest associated with the higher elevation mountain ranges; and desert scrub located in the northeastern portion of the county within the Mojave Desert. These communities provide habitat for a vast assemblage of flora and fauna, many of which are endemic to California, and are discussed in more detail in Section 5.2.1.4.

Within the Pure Water area, important biological resources are generally associated with open space areas in the surrounding region. Protected open space areas, federal lands, and other preserved lands within and adjacent to the Pure Water area include the San Gabriel Mountains/Angeles National Forest to the north; local open space areas and preserves located at the foothills of the San Gabriel Mountains; Santa Fe Dam Recreation Area along the upstream portion of the San Gabriel River; Whittier Narrows Recreation/Natural Area located near the northern portion of the backbone alignment, downstream of

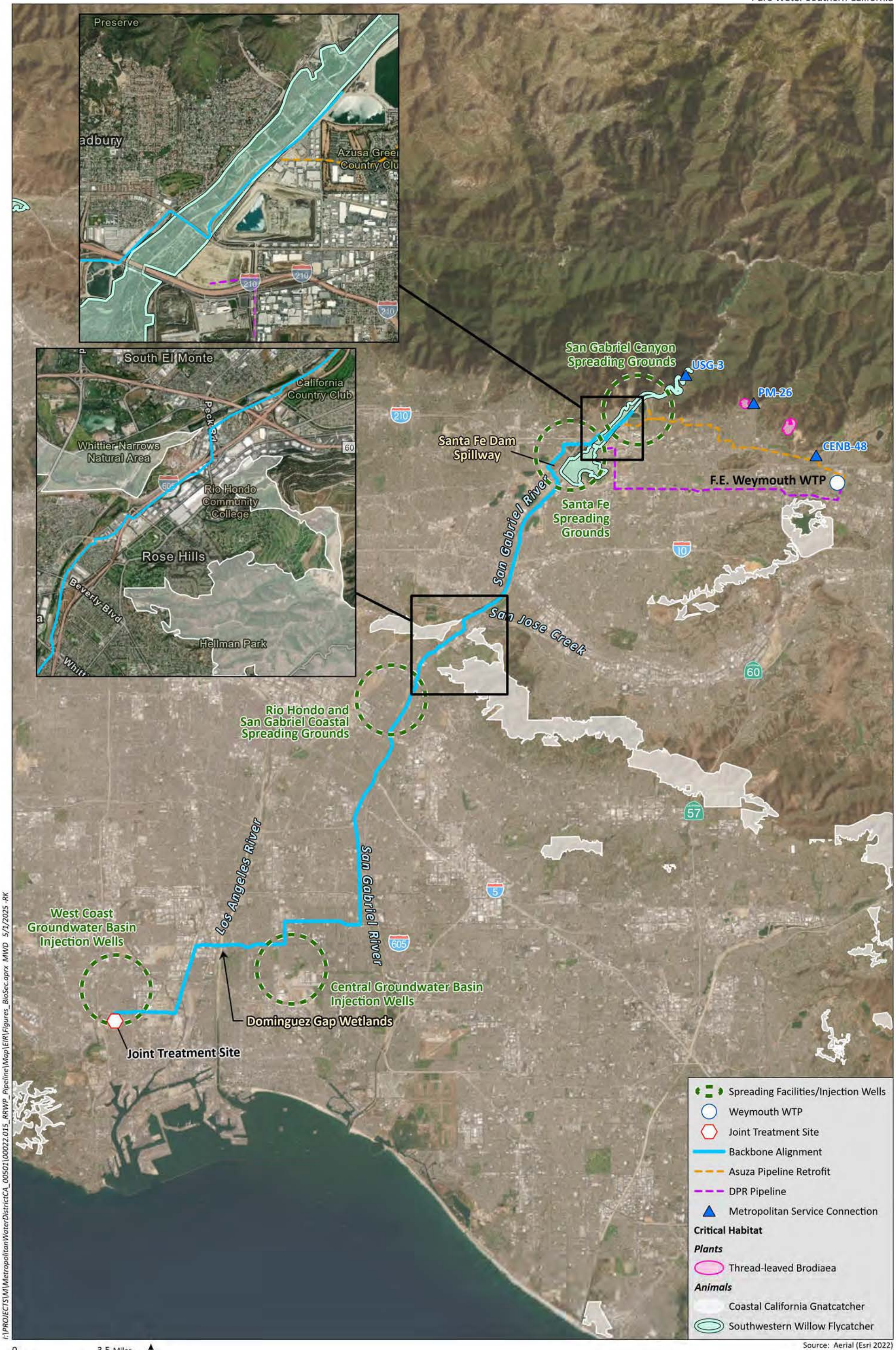
the San Gabriel River and San Jose Creek confluence; Sycamore Canyon Open Space and other open space areas located east of the central portion of the backbone alignment in the Puente Hills; recreational parks located along the San Gabriel River; and the Frank G. Bonelli Regional Park located approximately 0.8 mile south of the Weymouth WTP. These areas provide live-in habitat for native species, facilitate the dispersal of species, and/or provide shelter and foraging habitat for migrating species, primarily birds.

Several of these open space areas have also been designated as Significant Ecological Areas (SEA) by the County of Los Angeles. SEA are defined as lands that contain irreplaceable biological resources, along with important linkages and corridors that promote wildlife movement. SEA in the Pure Water area include the Puente Hills SEA along the central portion of the backbone alignment; the San Gabriel Canyon SEA along the northern portion of the backbone alignment and the upper reach of the San Gabriel River that includes service connection USG-3; the East San Gabriel Valley SEA west and southwest of the Weymouth WTP; and the San Dimas Canyon/San Antonio Wash SEA northeast and east of service connection CENB-48 at San Dimas Wash (**Figure 5.2-2**). The Puente Hills SEA is a linkage connecting the Puente Hills with the Chino Hills in Orange County. The San Gabriel Canyon SEA is centered on three major canyons which flow from the mountains (San Gabriel, Sawpit, and Santa Anita Canyons) and includes the interconnecting terrain between these areas. The East San Gabriel Valley SEA contains several ridgelines and hilltops and a major drainage (Walnut Creek) at the eastern end of the San Jose Hills; Frank G. Bonelli Regional Park and Walnut Creek Park represent the largest components of this SEA. The San Dimas Canyon/San Antonio Wash SEA is located along the foothills of the eastern San Gabriel Mountains and is centered on four major canyons which flow from the mountains (San Antonio, Live Oak, Marshall, and San Dimas Canyons).

In addition to SEA, USFWS-designated critical habitat for two federally listed animal species, SWFL and CAGN, and one federally listed plant species, thread-leaved brodiaea (*Brodiaea filifolia*), occurs within the Pure Water area (**Figure 5.2-3**). Critical habitat includes specific areas that contain physical and biological features essential to the conservation and recovery of federally listed species. USFWS-designated critical habitat (herein referred to as critical habitat) for SWFL occurs within the San Gabriel Canyon SEA along the San Gabriel River within the northern portion of the backbone alignment from the Santa Fe Dam Recreation Area north to Morris Dam, which also includes service connection USG-3. The CAGN critical habitat is located within and adjacent to the Puente Hills SEA near the central portion of the backbone alignment in association with the Whittier Narrows Recreation/Natural Area and Sycamore Canyon. Critical habitat for CAGN also occurs southwest of the Weymouth WTP within and adjacent to the East San Gabriel Valley SEA in association with Frank G. Bonelli Regional Park and San Jose Hills. The thread-leaved brodiaea critical habitat includes two separate patches located north of I-210 at the foothills of the San Gabriel Mountains near Morgan Canyon and Englewild Canyon. The westernmost patch is located west of service connection PM-26 (Little Dalton Wash) and the more eastern patch is located between service connections PM-26 and CENB-48 (San Dimas Wash).

5.2.1.3 Program-Level Resources

The Pure Water area is largely comprised of developed areas, including residential and commercial development, industrial areas, roadways, ditches and storm drain culverts, and paved lots. As described earlier, this area also contains a wide range of habitats and biological communities, open space areas, SEA as designated by the County of Los Angeles, and critical habitat for two federally listed animal species and one federally listed plant species.



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PUREWATER SOUTHERN CALIFORNIA

USFWS Critical Habitat

Figure 5.2-3

Biological resources at and downstream of PM-26 (Little Dalton Wash), CENB-48 (San Dimas Wash), and USG-3 (upper reach of San Gabriel River) include disturbed habitat, open water, unvegetated habitat, non-native grassland, non-native vegetation, eucalyptus woodland, mixed chaparral, laurel sumac chaparral, coastal sage scrub, alluvial fan sage scrub, coast live oak woodland, arundo-dominated riparian, mule fat scrub, sycamore woodland, riparian scrub, riparian forest, and riparian woodland, varying by location (**Figures 5.2-4** through **5.2-8**). Information regarding resources within the BSA, including the lower reach of San Gabriel River and Santa Fe Dam Spillway, is provided in Section 5.2.1.4.

5.2.1.4 Project-Level Resources

Vegetation Communities/Land Cover Types

Given the relatively large scale and urbanized character of the BSA, both the Holland/Oberbauer and Manual of California Vegetation (MCV) classification systems were used to map vegetation communities (including land cover types) within the BSA. The MCV classifies vegetation types at the state level following California's expression of the National Vegetation Classification System and is CDFW's preferred classification system. The MCV is a hierarchical classification system that characterizes vegetation types based on growth forms and structure at the upper level, formation class (e.g., forest and woodland), and floristic details that reflect diagnostic species at the lowest levels: alliance (e.g., coast live oak woodland and forest) and association (e.g., coast live oak/California sagebrush woodland). Vegetation types at the association level are typically described in region-specific vegetation classification reports and are often recognized by two or more diagnostic species that are often found in different vegetation layers, which circumscribe the most detailed similarities of species composition and climate, topography, substrate, hydrology, and disturbance. Currently, there is not a region-specific vegetation classification report that covers the Pure Water area. As such, MCV vegetation types in this report are presented at the alliance level. Alliances describe repeating patterns of plants across a landscape, are defined by plant species composition, and reflect the effects of local climate, soil, water, disturbance, and other environmental factors. Vegetation communities mapped within the BSA were translated from the Holland/Oberbauer community to the equivalent classification unit under MCV in order to demonstrate consistency with CDFW's preferred classification system and to determine sensitivity rankings. Direct translations between Holland/Oberbauer and MCV do not exist for all vegetation types. Additionally, a single vegetation community under Holland/Oberbauer may fit the definition of several different alliances described within the MCV. For communities that do not have direct translations within the MCV, professional judgment was used to find the best corresponding alliance. Seven Holland/Oberbauer vegetation communities within the BSA are not described in the MCV; therefore, these communities are only presented and described using the Holland/Oberbauer system.

There are 21 vegetation communities or other land cover types present within the BSA (**Figures 5.2-9a** through **5.2-9z**). A brief description of each vegetation community or land cover type within the BSA is summarized below in **Table 5.2-3** using the Holland/Oberbauer description. Vegetation communities are presented by their MCV common name, where available, followed by the Holland/Oberbauer classification in parentheses. If no MCV common name is available, only the Holland/Oberbauer classification is provided. The Joint Treatment Site only includes disturbed habitat and developed land; all other vegetation communities/land cover types occur along the backbone alignment.

Pure Water Southern California

Backbone Pipeline
Discharge Location

Morris Reservoir
USG-3
San Gabriel River Upper Reach
San Gabriel River Lower Reach
Big Dalton Reservoir
Little Dalton Wash
PM-26
Little Dalton Spreading Grounds
San Dimas Reservoir
San Dimas Wash
CENB-48
San Dimas Spreading Grounds
Santa Fe Spreading Grounds
Santa Fe Dam Spillway

0 4,000 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Imported Water Flow Changes

Figure 5.2-4

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Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

PM-26: Little Dalton Wash

Figure 5.2-5

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0 200 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

CENB-48: San Dimas Wash

Figure 5.2-6

Discharge Study Area
Metropolitan Service Connection

Vegetation and Land Cover Types

- Alluvial Fan Sage Scrub
- Alluvial Fan Sage Scrub - Disturbed
- Coast Live Oak Woodland
- Coastal Sage Scrub
- Coastal Sage Scrub- Disturbed
- Coastal Sage Scrub (Laurel Sumac Dominated)
- Developed
- Disturbed Habitat
- Laurel Sumac Chaparral
- Mixed Chaparral
- Mule Fat Scrub
- Non-native Grassland
- Non-native Grassland - Fountain Grass Dominated
- Open Water
- Riparian Scrub
- Riparian Scrub - Disturbed
- Rock Outcrop
- Southern Willow Riparian Forest
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Sycamore Riparian Woodland
- Tamarisk Scrub

Special Status Plant Species*

- Coulter's Matilija Poppy

Special Status Animal Species

- Yellow Warbler

**Cultivated population. Locations do not represent natural occuring individuals.*

Silver Fish Tktr
23N28
Silver Fish Tktr
23N28
Morris Reservoir
USG-3
SR 39
San Gabriel Canyon Rd
San Gabriel Canyon Rd
Roberts Canyon
110
140
150
See Figure 5.2-7b
1N26
Running Dr
N San Gabriel Canyon Rd
W Sierra Madre Ave
PM-26
CENB-48
West Covina
El Monte
Los Angeles
Chino Hills
Anaheim
Long Beach
Santa Ana
Beach

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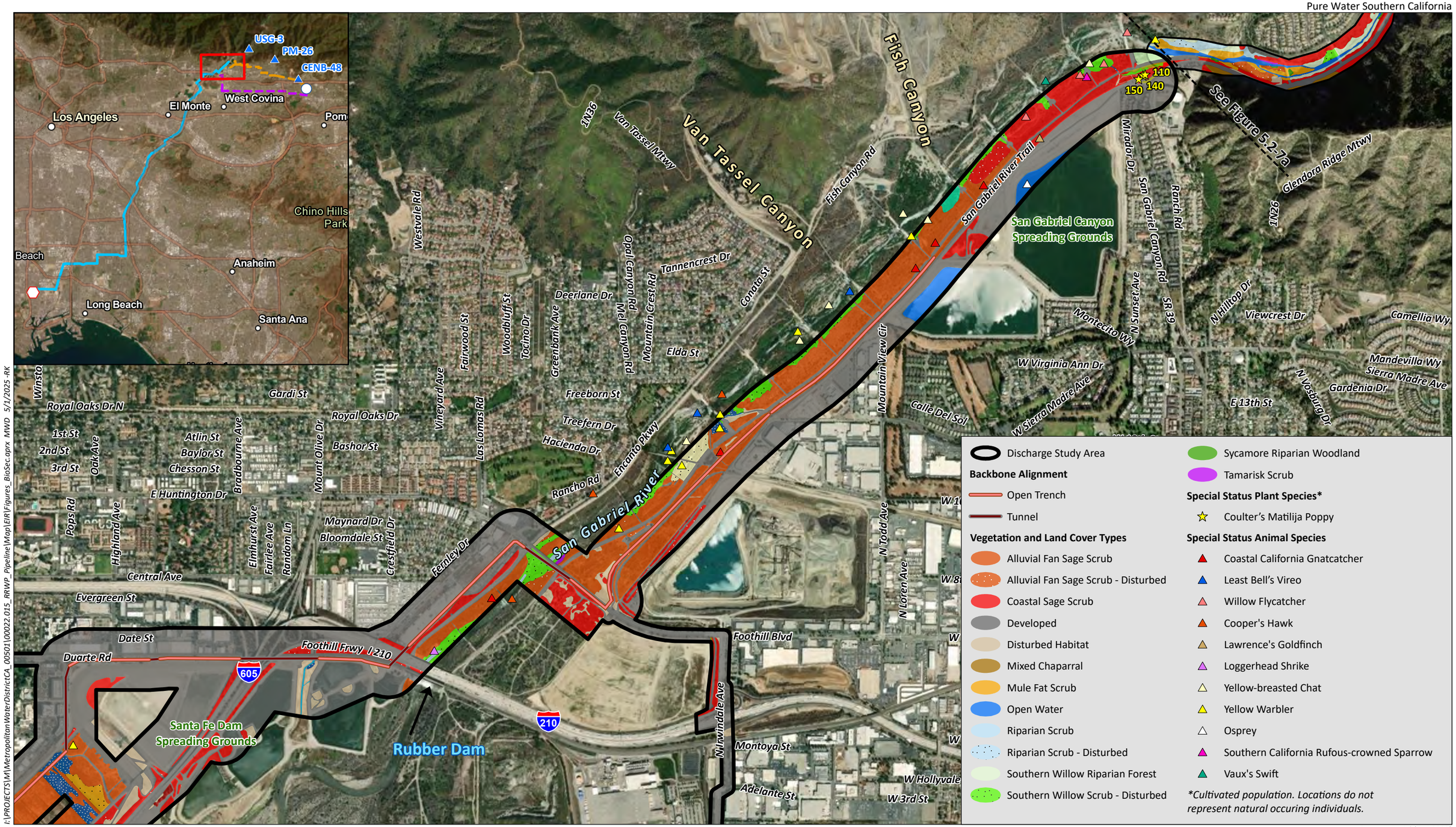
0 1,000 ft

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

USG-3: San Gabriel River - Upper Reach

Figure 5.2-7a



Source: Aerial (Esri 2022)

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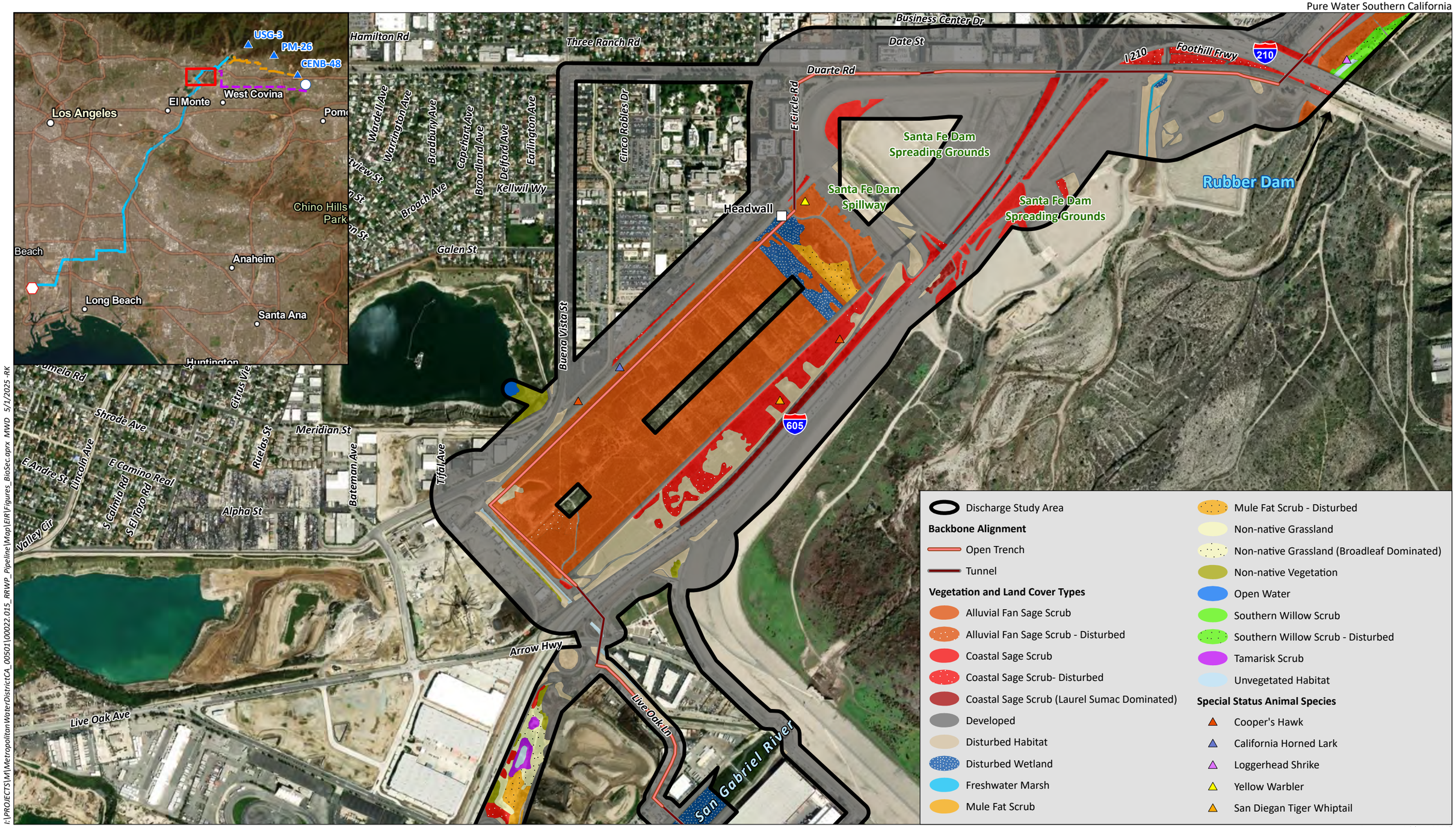
PURE WATER SOUTHERN CALIFORNIA

USG-3: San Gabriel River - Lower Reach

Figure 5.2-7b



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0 1,000 Feet

N

Source: Aerial (Esri 2022)

PUREWATER SOUTHERN CALIFORNIA

Santa Fe Dam Spreading Grounds and Spillway

Figure 5.2-8

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

San Gabriel Canyon Spreading Grounds

Santa Fe Spreading Grounds

Santa Fe Dam Spillway

San Gabriel Coastal Spreading Grounds

Dominguez Gap Wetlands

Joint Treatment Site

a

b

c

d

e

f

g

h

i

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o

p

q

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x

y

z

Los Angeles River

San Gabriel River

San Jose Creek

Los Angeles

La Crescenta-Montrose

Verdugo Mountains Open Space Preserve

La Cañada Flintridge

Altadena

Sierra Madre

Glendale

Pasadena

Duarte

Azusa

Arcadia

San Gabriel Alhambra

Rosemead

El Monte

South El Monte

West Covina

Covina

Monterey Park

East Los Angeles

Montebello

La Puente

Maywood

Huntington Park

Florence-Graham

South Gate

Whittier

Santa Fe Springs

Downey

La Habra

South Whittier

Lynwood

Willowbrook

Norwalk

Bellflower

Cerritos

Buena Park

Fullerton

Lakewood

Hawaiian Gardens

Anaheim

Carson

Los Alamitos

Signal Hill

Long Beach

Garden Grove

Naval Weapons Station Seal Beach

Westminster

0 2.5 Miles

N

Source: Aerial (Esri 2020)

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PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts Overview

Figure 5.2-9a

Biological Study Area
Joint Treatment Site
Backbone Alignment
Open Trench
Tunnel
Project Impacts
Permanent Impacts
Temporary Impacts
Vegetation and Land Cover Types
Developed
Disturbed Habitat

Berendo Ave
Lindencliff St
Oakwater St
Sesame St
S Orchard Ave
S Caroldale Ave
S Moneta Ave
S Mehden Ave
W 234th St
W 234th Pl
W 235th St
E 234th St
E 234th Pl
E 235th St
S Catskill Ave
S Maribel Ave
S Anchor Ave
S Frigate Ave
S Dolores St
S Panama Ave
E 236th St
W Carriagedale Dr
S Enola Ave
S Ronan Ave
S Gulf Ave
E 237th St
E 238th St
S Idaho Ave
S Avalon Blvd
Scottsdale S
Paradise Valley S
Camelback Ave S
S 238th Pl
E 238th Pl
W Sepulveda Blvd
E Sepulveda Blvd
S Banning Blvd
S Main St
E Lincoln St
E Pacific St
E Realty St
E Bonds St
S Broad St
S East St
Stonebryn Dr
Ashbridge Dr
Ashpark Ln
Fernlake Dr
Ashbridge Ln
Fernrest Dr
Oakhorne Dr
Koleeta Dr
244th St
245th St
S Vermont Ave
S Figueroa St
110
E 244th St
E 245th St
E 246th St
Albatross Ave
Oceanside St
S Marina Ave
Avalon Blvd
S Marbella Ave
S Neptune Ave
S Ravenna Ave
S Island Ave
S Fries Ave
S Mill Valley Wy
S Carmel Dr
E 249th St
Normandie Ave
Frampton Ave
Mariposa Ave
Cutter Wy
West Dr
Circle Dr
Center Circle Dr
West Ave
East Dr
WHALER Wy
W Circle
S Circle
E Circle
South Dr
5th Ave E
4th Ave E
3rd Ave E
2nd Ave E
1st Ave E
W Lomita Blvd
Lomita Blvd
Marigold Ave
W 251st St
W 252nd St
W 253rd St
Petroleum Ave
Broadwell Ave
Doble Ave
McCoy Ave
Lighthouse Dr
Surf Ct
Rocky Point Rd
Harborlight Dr
Eudora Ave
Van Tress Ave
W Don St
W R St
Frigate Ave
W Chandler St
W Lowen St
N Wilmington Blvd
N Gulf Ave
N Ronan Ave
Bayview Ave
N Neptune Ave
N Ravenna Ave
N Lagoon Ave
N Island Ave
N Fries Ave
W Q St

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9b

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

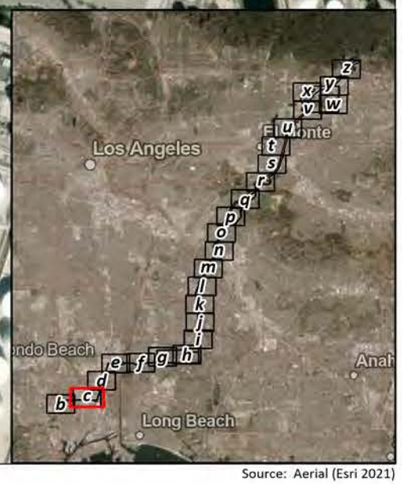
Developed

Disturbed Habitat

Non-native Riparian

Open Water

E Watson Center Rd
S Utility Wy
E 230th St
E 233rd St
S Wilmington Ave
Johns Manville St
S Alameda St - SR-47
S Intermodal Wy
E Sepulveda Blvd
E 236th St
E 237th St
E 238th St
E 238th Pl
E Bay St
S Maribel Ave
S Anchor Ave
S Avalon Blvd
Scottsdale Dr
Paradise Valley N
Camelback Ave N
S Banning Blvd
Scottsdale S
Paradise Valley S
Camelback Ave S
S Idabel Ave
E Lincoln St
E Pacific St
E Realty St
S Bonita St
S Fries Ave
S Broad St
S East St
E Bonds St
Deloras Dr
Oceanside St
Seaglove Ave
Wilmington Ave
E 245th St
E 246th St
S Marine Ave
Avalon Blvd
Albatross Ave
Broad Ave
Lakme Ave



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Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9c

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Developed

E 213th St
E Albreda St
E Califon St
E 215th St
E 215th Pl
S Vera St
S Martin St
S Water St
E Carson St
Carson Frontage
S Arnold Center St
E 218th St
E Abila St
E Beach St
E Abri St
S Wilmington Ave
E 220th St
E 223rd St
Johns Manville St
E Watson Center Rd
S Alameda St SR 47
S Salmon Ave
S McHellen Ave
S Embassy Ave
E Harrison St
E Van Buren St
E Jackson St
E Monroe St
E Madison St
E Jefferson St
E Adams St
E Washington St
S Harbor View Ave
S Prospect Ave
S Santa Fe Ave
S Baltic Ave
Via Alcalde Ave
W Carson St
Via Oro Ave
Forbes Wy
Hughes Wy
E 218th Pl
E 219th St
E 219th Pl
S Garfield Ave
E 220th Pl
E 221st St
E 221st Pl
Warnock Wy
223rd St
W Ward
W Cameron St
Hesperian Ave
River Ave
W Lincoln St
Webster Ave
W Arlington St
Seabright Ave
Santa Fe Ave
Pacific Dr
Dolphin St
Sunset Dr
Winward Dr
Park Rd
Beach St
Coral St
Palm
Harbor St
405
710
Los Angeles
Long Beach
Anah

0 800 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9d

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Coastal Sage Scrub

Developed

Disturbed Habitat

Disturbed Wetland

Freshwater Marsh

Open Water

Southern Willow Scrub

Unvegetated Habitat

Special-status Animal Species

Yellow Warbler

S Reyes Ave
E Val Verde Ct
S Susana Rd
Compton Creek
Los Angeles River
De Forest Ave
E Del Amo Blvd
W Del Amo Blvd
710
S Santa Fe Ave
S Alameda St SR 47
S Rancho Wy
E Pacifica Pl
S Reeves Ave
S Fordyce Ave
E 208th St
E El Presidio St
E 209th St
S Maciel Ave
S Brant Ave
S Kamberton Ave
E Dominguez St
E Tyler St
E Harrison St
E Van Buren St
S Harbor View Ave
S Prospect Ave
S Baltic Ave
N 208th St
Dominguez St
Dominguez Gap Wetlands
3rd St
4th St
5th St
W Louise St
E 55th St
Dairy Ave
E Louise St
W Market St
Market St
W Plymouth St
E Plymouth St
W 53rd St
E 53rd St
Pine Ave
Cedar Ave
W Mountain View St
E Mountain View St
E Platt St
W 52nd St
E 52nd St
E Morningside St
W Zane St
E Sunset St
W 51st St
E 51st St
W Home St
E Home St
Pacific Ave
W Pleasant St
E Pleasant St
Holly Ave
Gundry Ave
Brook Ave
Agate Ave
Oregon Ave
Daisy Ave
W 49th St
E 49th St
Virginia Ave
Long Beach Blvd
W Arbor St
E Arbor St
Los Angeles
Long Beach

0 800 Feet

N

Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9e

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Developed

Dairy Ave
E Louise St
E Michelson St
E 55th St
N Olive Ave
N Myrtle Ave
N Lewis Ave
Lemon Ave
Cerritos Ave
N Lime Ave
Market St
E Washington St
N Walnut Ave
N Rose Ave
N Pointe Apartment Homes
N Paramount Blvd
Candlewood St
E Plymouth St
Pine Ave
N Elm Ave
Linden Ave
W 53rd St
E 53rd St
Cedar Ave
W Mountain View St
E Mountain View St
Del Bay St
Dollar St
Dashwood St
E Jackson St
E Platt St
E Via Wanda
W 52nd St
E 52nd St
Locust Ave
N Via Verde
N Via Veranada
E Hardwick St
Rose Ave
Gaviota Ave
N Raton Cir
Elderhall Ave
Meadow Wood Ave
Denmead St
Hardwick St
E Morningside St
W Zane St
E Sunset St
Lark Bay Ln
Yearling St
W 51st St
E 51st St
E Via Carmelitos
Eckleson St
W Home St
E Home St
Silva St
E Plenty St
E Silva St
Del Hollow St
W Del Amo Blvd
E Del Amo Blvd
Del Amo Blvd
Gardenia Ave
S Atlantic Ave
Elm Ave
W Pleasant St
E Pleasant St
Pacific Ave
N Long Beach Blvd
E Peace St
Allred St
Clair Del Ave
Deerford St
Paramount Blvd
W 49th St
E 49th St
Agate Ave
Oregon Ave
Daisy Ave
Virginia Ave
W Arbor St
E Arbor St
E Luray St
E Terrace Dr
E Ridgewood St
N Bentree Ave
Orange Ave
Brayton Ave
Boyar Ave
Nutley Ave
Loomis St
E 47th St
W 48th St
W 47th St
Dominguez Gap Wetlands
E 46th St
E 45th Wy
E Marcellus St
E San Antonio Dr
N Banner Dr
E Goldfield Ave
Gundry Ave
Falcon Ave
Cherry Ave
N Deal Dr
N Tolbert Ave
Pasadena Ave
N Whaley Ave
E 45th St
E Freeland St
Cerritos Dr
N Atlantic Pl
California Ave
California Pl
E 44th Wy
E 44th Cir
N Virginia Rd
N Country Club Ln
E Claiborne Dr
E La Dera Dr
Maury Ave
Walnut Ave
E Keever Ave

0 800 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9f

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Developed

Open Water

E 59th St
E Arabella St
Arabella St
E Andy St
Andy St
Pennswood Ave
Dagwood Ave
E Hullett St
N Obispo Ave
E South St
N Paramount Blvd
South St
E 57th St
E 56th Wy
E 55th Wy
Acacia Ln
N Orizaba Ave
Wolfe St
Hayter Ave
Castana Ave
Oliva Ave
Michelson St
Bonfaii Ave
Blackthorne Ave
Hazelbrook Ave
Graywood Ave
Whitewood Ave
Sunfield Ave
E 56th St
N Rose A
E Rogers St
E Cherry Industrial Cir
Ackerfield Ave
Langport Ave
N Pointe Apartment Homes
Via Norte
Via Alondra
Via Bonita
Via Conejo
Via Del Sol
Via Fortuna
Via Goleta
Ryan Ave
Piercy Ave
Wagner Ave
Esquivel Ave
Samantha Ave
Brean St
Candor St
Capetown St
Pimenta Ave
Van Nostran Dr
Camerino St
Downey Ave
Candlewood St
Family Ln
Dollar St
Dashwood St
Denmead St
Hardwick St
Yearling St
Eckleson St
Silva St
Klondike Ave
Bixler Ave
Obispo Ave
Verdura Ave
Berlin Ave
Minturn Ave
Lakewood Blvd SR 19
Pepperwood Ave
Lakewood Center Mall
Daneland St
A St
B St
C St
D St
Faculty Ave
Clark Ave
Del Bay St
Deebayar Ave
Meadow Wood Ave
Elderhall Ave
Lark Bay Ln
Paramount Blvd
Walnut Ave
Arriola Ave
N Raton Ci
E Silva St
Del Hollow St
E Del Amo Blvd
Del Amo Blvd
E Luray St
Gundry Ave
Falcon Ave
E San Antonio Dr
Gardenia Ave
Clair Del Ave
Pixie Ave
Allred St
Loomis St
Levelside Ave
Deerford St
Sandwood St
Coke Ave
N Pepperwood Ave
N Blackthorne Ave

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9g

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Developed

Hedda St
Pennswood Ave
Dagwood Ave
Amos Ave
Eastbrook Ave
Ibbetson Ave
Hungerford St
Arabella St
E Andy St
Droxford St
Edgefield St
Charlwood St
Snowden Ave
Canehill Ave
Rocket St
South St
La Jara St
Hedda Pl
Arabella Pl
Andy St
S Santana Ave
Deloise Ave
Rhine Pl
Kings Row Ave
San Gabriel Ave
San Gabriel River
Castle Pl
Dillman St
Wolfe St
Whitewood Ave
Sunfield Ave
Bigelow St
Bellflower Blvd
Michelson St
Caldbrook Ave
Ocana Ave
Candor St
Woodruff Ave
Spahn Ave
Gondar Ave
Capetown St
Palo Verde Ave
Hackett Ave
Kettler Ave
Kirkland Ave
Josie Ave
Knoxville Ave
Stevely Ave
Clark Ave
Candlewood St
Fidler Ave
Premiere Ave
Pearce Ave
Lorelei Ave
Hersholt Ave
Autry Ave
Montair Ave
Ademoor Ave
Briercrest Ave
Dunrobin Ave
Cardale St
Chesteroark Dr
McKnight Dr
Corfax Ave
Dashwood St
Denmead St
Iroquois Ave
Eberle St
Glorywhite St
Ianita Ave
Nixon St
Rachel Ave
Hardwick St
Yearling St
Faust Ave
Fairwood Ave
Turnetgrove Dr
Eckleson St
McNab Ave
B St
C St
D St
Civic Center Wy
Lakewood Center Mal
Faculty Ave
Silva St
N Pearce Ave
Del Amo Blvd
Los Angeles
Long Beach
Anah
ndo Beach
Pe

0 800 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9h

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

Vegetation and Land Cover Types

Developed

Disturbed Habitat

Non-native Vegetation

Walnut St
Flora Vista St
Park St
Beach St
Palm St
Beverly St
Artesia Pl
Stonebank St
Hacienda St
Monterey St
Borwick St
Ramona St
Artesia Blvd
Cedar St
E Plunkett St
Acoro St
Destino St
Rose St
Semora St
Ashworth St
Spruce St
E Reva St
Chestnut St
Reva St
Ponderosa St
Carnaby St
Amber St
Allington St
Hungerford St
Arabella St
Hedda St
Ardmore Ave
Bixby Ave
California Ave
Ripon Ave
Josie Cir
Grand Ave
Regency Cir
Bellflower Blvd
Woodruff Ave
Balfern Ave
Carpintero Ave
Ibbetson Ave
Faust Ave
Canehill Ave
Loreley Ave
Hershol Ave
Autry Ave
Amos Ave
Adenmoor Ave
Brierrest Ave
Coldbrook Ave
Dunrobin Ave
Eastbrook Ave
91

Estella Ave
Debra Ln
Myra Ln
Roberta St
Brigantine St
Harvard Dr
E 166th St
Wimbley Ct
Bermuda St
Windward Ave
Elmcroft Ave
167th St
Windjammer Rd
Lucas St
Gridley Pl
Jenkins St
Baber Ave
Hart St
Aclare St
Caine Dr
San Gabriel River
Studebaker Rd
605
Business Cir
Acoro Ave
Aiora Ave
Graystone Ave
Mapes Ave
Gridley Rd
176th St
177th St
178th St
Felson St
Eric Ave
Hoffman Ave
San Gabriel Ave
Dumont Ave
Ashworth Cir
Reva Pl
Crusader Ave
Palo Verde Ave
S Scintana Ave
Deloise Ave
Elgers St
La Jara St
Hedda Pl
Arabella Pl
Andy St
Best Plz
183rd St

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0 800 Feet

N

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9i

Biological Study Area

Backbone Alignment

Open Trench

Tunnel

Project Impacts

Temporary Impacts

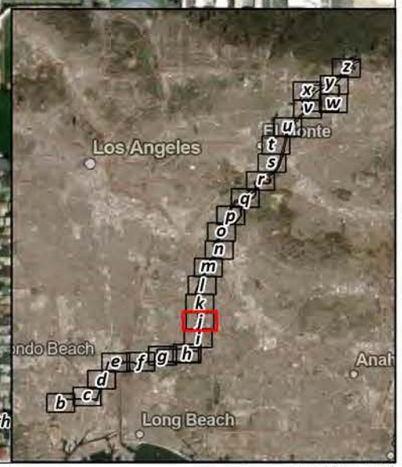
Vegetation and Land Cover Types

Developed

Disturbed Habitat

Non-native Grassland

Washington St
Fleming Ave
Faywood St
Somerset Ave
Nichols St
Woodruff Pl
Jefferson St
Blaine Ave
Linden St
Eucalyptus Ave
Cornuta Ave
Woodruff Ave
Bellflower Blvd
Harvard St
Lowemont St
Nava St
Alondra Blvd
Trabuco St
McNab Ave
Ives St
Highdale St
Carfax Ave
San Gabriel River
Behrens Ave
Dumont Ave
Leibacher Ave
Halcourt Ave
Allingham Ave
Benfield Ave
Dalwood Ave
Elmcroft Ave
Mapledale St
Sibley St
Everston St
Jersey Ave
Fairton St
Excelsior Dr
Gridley Rd
Domart Ave
Flatbush Ave
Hopland St
Molette St
Barnwall St
Ferina St
Sylvanwood Ave
McRae Ave
Roseton Ave
Gard Ave
Cheshire St
Maidstone Ave
605
Hayford St
Studebaker Rd
Crossdale Ave
Fairford Ave
Graystone Ave
Longworth Ave
Harvest Ave
Mayne St
Oak St
Belmont St
Laurel St
Pacific Ave
Flower St
Maple St
Bixby Ave
Walnut St
Flora Vista St
Oregon Ave
California Ave
Midway St
Grand Ave
Chicago Ave
View Park Ave
Piuma Ave
Midway Ave
College Pl
Mellissa St
Falcon Wy
New Falcon Wy
Elena St
Estella Ave
Debra Ln
Myra Ln
Eric Ave
Alora Ave
E 166th
Roberta St



0 800 Feet

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Source: Aerial (Esri 2021)

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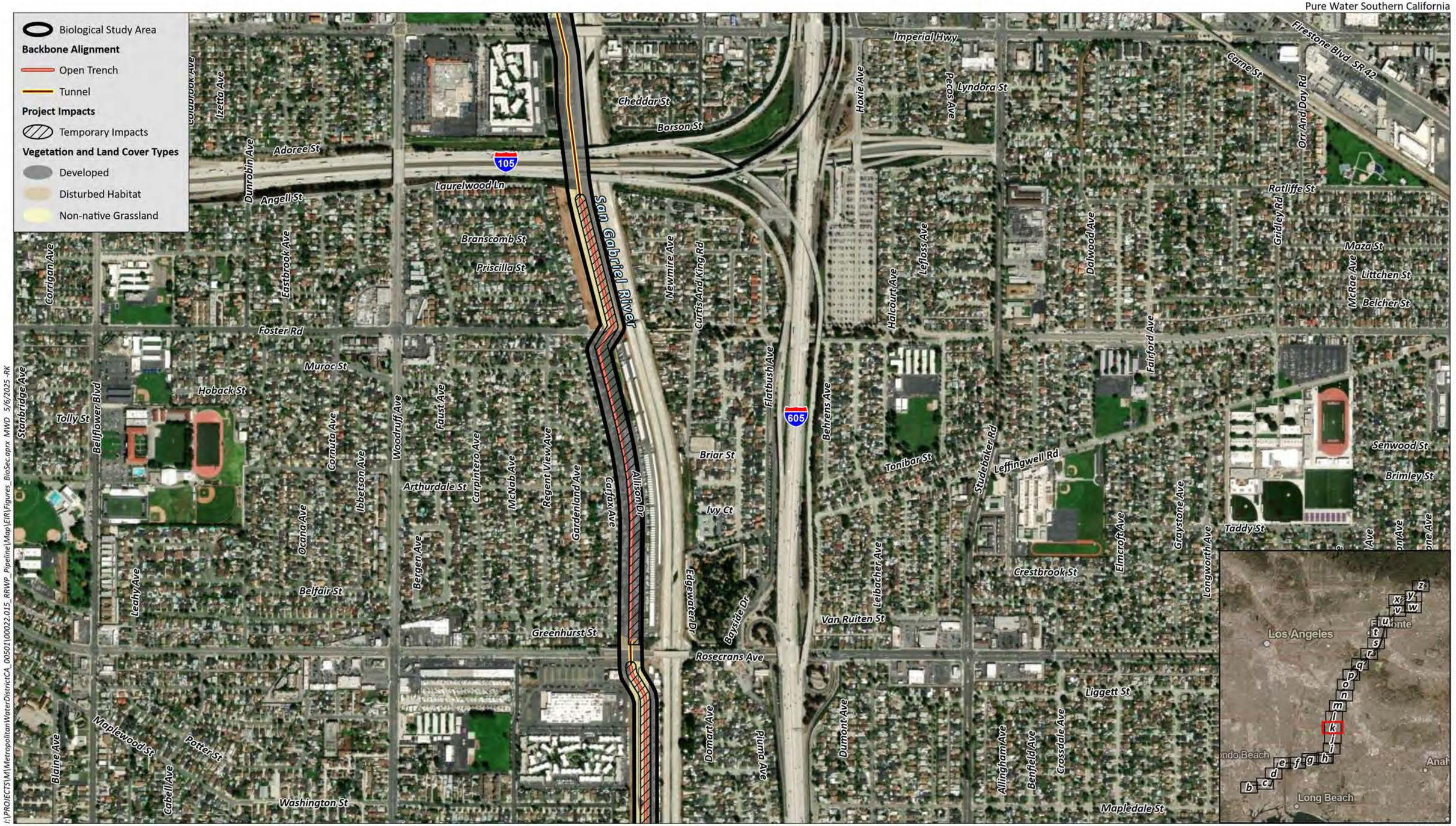
PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9j



0 800 Feet

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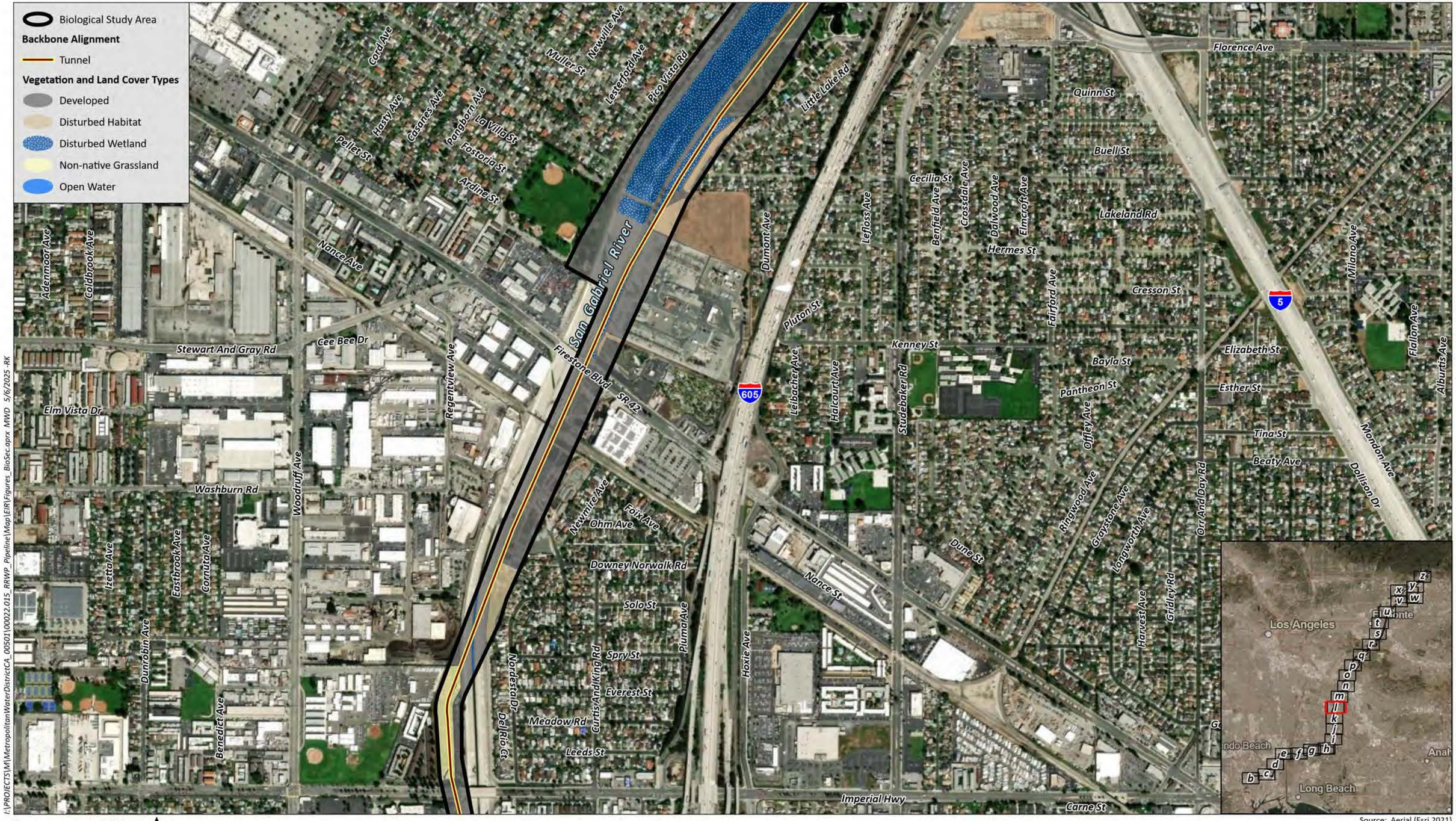
PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9k



Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9l

Biological Study Area

Backbone Alignment

Tunnel

Vegetation and Land Cover Types

Developed

Disturbed Habitat

Disturbed Wetland

Non-native Grassland (Broadleaf Dominated)

Special-status Animal Species

Yellow Warbler

San Gabriel River

0 800 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9m

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

Vegetation and Land Cover Types

- Developed
- Disturbed Habitat
- Disturbed Wetland
- Eucalyptus Woodland
- Non-native Grassland (Broadleaf Dominated)
- Non-native Vegetation
- Southern Willow Scrub

Special-status Animal Species

- Least Bell's Vireo

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9n

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

Vegetation and Land Cover Types

- Developed
- Disturbed Habitat
- Disturbed Wetland
- Freshwater Marsh
- Non-native Grassland
- Non-native Vegetation
- Open Water
- Ornamental Vegetation
- Southern Willow Scrub

Special-status Plant Species*

- Matilija Poppy
- Torrey Pine
- Coulter's Matilija Poppy Mixed Stand
- Matilija Poppy
- San Diego Marsh-elder

**All observed individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.*

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9o

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

Vegetation and Land Cover Types

- Coast Live Oak Woodland
- Coastal Sage Scrub
- Developed
- Disturbed Habitat
- Disturbed Wetland
- Eucalyptus Woodland
- Non-native Grassland
- Non-native Vegetation
- Ornamental Vegetation
- Southern Riparian Forest
- Southern Willow Scrub
- Unvegetated Habitat

Special-status Plant Species*

- Torrey Pine

Special-status Animal Species

- Yellow Warbler

**All observed individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.*

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9p

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

Vegetation and Land Cover Types

- Developed
- Disturbed Habitat
- Disturbed Wetland
- Non-native Grassland
- Non-native Riparian
- Non-native Vegetation
- Southern Riparian Forest
- Southern Riparian Forest - Disturbed
- Southern Willow Scrub
- Unvegetated Habitat

Special-status Animal Species

- Least Bell's Vireo
- Yellow Warbler

Siphon Rd
San Gabriel River
Pellissier Pl
Peck Rd
Rooks Rd
Baybar Rd
Capitol Ave
Mission Mill Rd
Workman Mill Rd
605
Narrows Dr
Sandoval Ave
Shadow Creek Ln
Bradgate Dr
San Gabriel River
Rose Hills Rd
Shepherd Dr
Progress St
E Mission Mill Rd
Friendship Ave
Briarfield St
Danville St
Hilton Head Wy
Spanish Trl
Par Pl
Fairway Dr
Woodford St
Cypress Point Dr
Banta Rd
Springland Dr
Elford Dr
Aleman Ave
Miguel Ave
Harrell St
Amistad Ave
San Gabriel River
San Gabriel River Pkwy
Abbeywood Ave
Nayes St
Rideau St
Lampson St
Balmoral St
Avancroft St
Croton Ave
Pioneer Blvd
Beverly Blvd
Cliota St
Kimbark Ave
Starca Ave
Canyon Meadows Dr
Rimview Dr
Overcrest Dr
Mountain Shado
Spy Glass Hill Rd
Woodmar Dr
Sierra Sky Dr
E Amber Hill Dr
Los Angeles
Long Beach
Anah

0 800 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9q

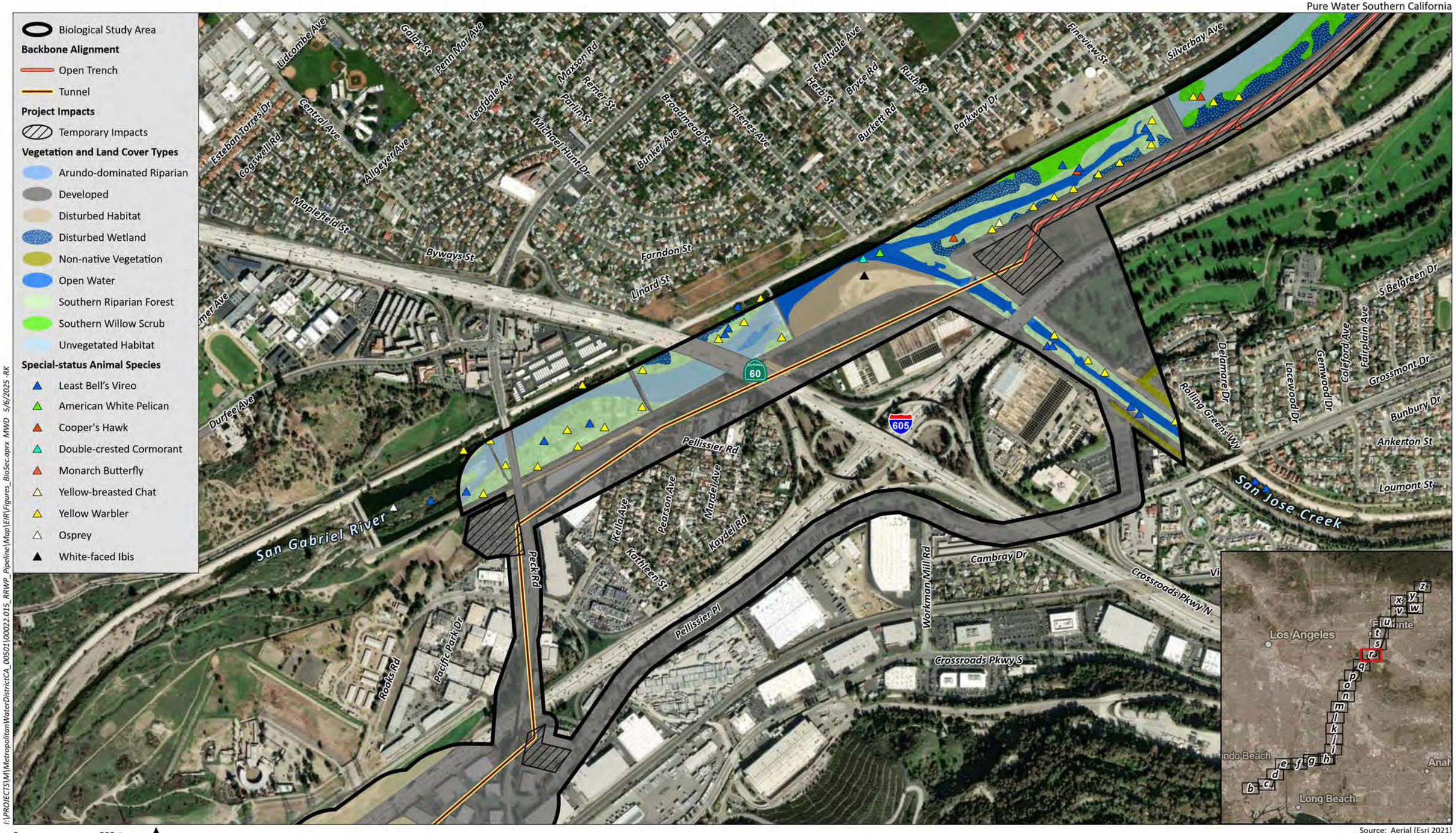
Biological Study Area

Backbone Alignment
- Open Trench
- Tunnel

Project Impacts
- Temporary Impacts

Vegetation and Land Cover Types
- Arundo-dominated Riparian
- Developed
- Disturbed Habitat
- Disturbed Wetland
- Non-native Vegetation
- Open Water
- Southern Riparian Forest
- Southern Willow Scrub
- Unvegetated Habitat

Special-status Animal Species
- Least Bell's Vireo
- American White Pelican
- Cooper's Hawk
- Double-crested Cormorant
- Monarch Butterfly
- Yellow-breasted Chat
- Yellow Warbler
- Osprey
- White-faced Ibis



0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9r

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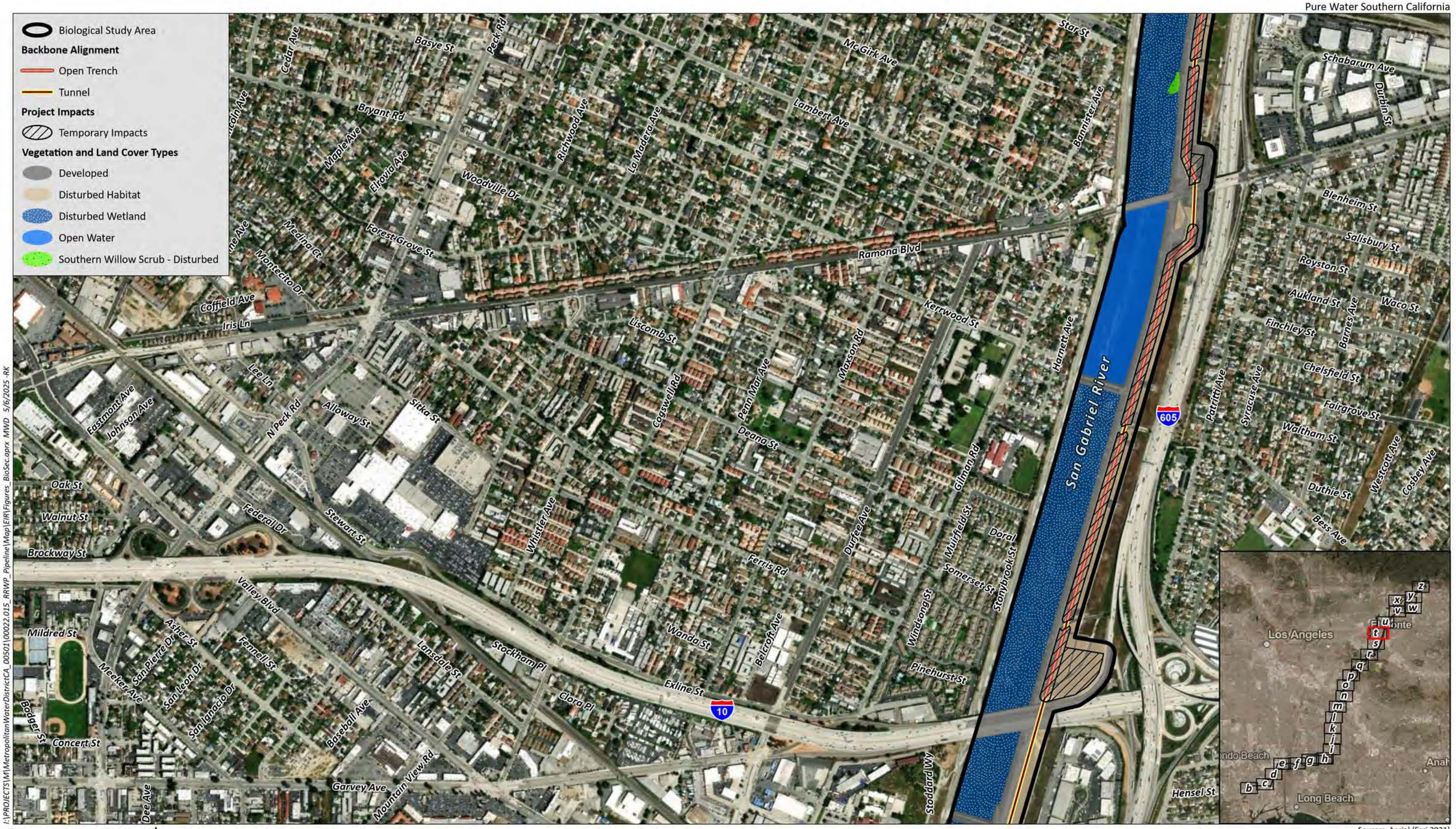
Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9s



Source: Aerial (Esri 2021)

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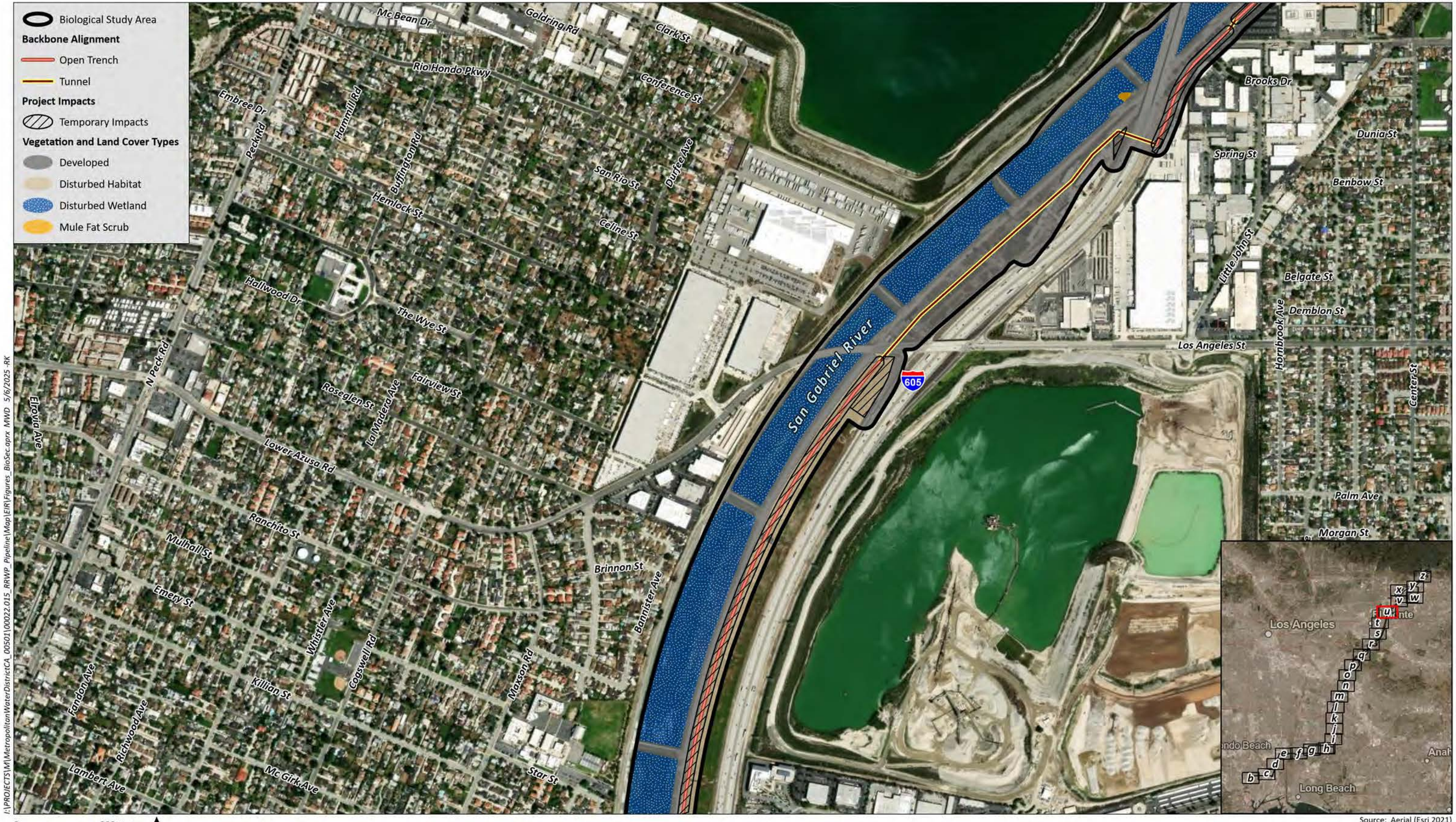
PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9t



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Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9u

Source: Aerial (Esri 2021)

0 800 Feet

N

PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9v

Biological Study Area

Vegetation and Land Cover Types

Developed

Disturbed Habitat

Special-status Animal Species

Cooper's Hawk

E 1st St
W 1st St
Ayala Ave
Martin Rd
S Peckham Rd
S Motor Ave
N Irwindale Ave
S Irwindale Ave
S Mira Loma Dr
Jackson Ave
S Jackson Ave
W Gladstone St
S Duggan Ave
Business Center Dr
Ornelas St
Ayon Ave
S Ayon Ave
3rd St
2nd St
Irwindale Ave
Salvatiera St
Morada St
Arrow Hwy
4th St
Maine Ave
E Joanbridge St
Bleecker St
Heintz St
Elton St
Gayhurst Ave
Calmview Ave
Lante St
Hidalgo St
Juarez St
Allen Dr

Los Angeles
Long Beach
Anah

0 800 Feet

N

Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9w

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

Vegetation and Land Cover Types

- Alluvial Fan Sage Scrub
- Alluvial Fan Sage Scrub - Disturbed
- Coastal Sage Scrub
- Coastal Sage Scrub- Disturbed
- Coastal Sage Scrub (Laurel Sumac Dominated)
- Developed
- Disturbed Habitat
- Disturbed Wetland
- Freshwater Marsh
- Mule Fat Scrub - Disturbed
- Non-native Vegetation
- Open Water
- Unvegetated Habitat

Special-status Animal Species

- Least Bell's Vireo
- Cooper's Hawk
- California Horned Lark
- Yellow Warbler
- San Diegan Tiger Whiptail

Central Ave
Evergreen St
Business Center Dr
Date St
Duarte Rd
Foothill Frwy
I 210
Mountain Ave
Shepherd Dr
Hamilton Rd
Three Ranch Rd
Bryceedale Ave
Cotter Ave
Duncannon Ave
Eastford Ave
Highland Ave
Flower Ave
Fairlee Ave
Random Ln
E Circle Rd
Cinco Robles Dr
Buena Vista St
Wardell Ave
Warrington Ave
Bradbury Ave
Capehart Ave
Broadland Ave
Delford Ave
Earlington Ave
Hurstview St
Lewiston St
Newington St
Broach Ave
Hurlock Ave
Starhaven Ave
Galen St
Kellwil Wy
Maydee St
Citrus View Ave
Shrode Ave
Riuelas St
Meridian St
Bateman Ave
Tijal Ave
E Camino Real
S Calmia Rd
S El Toro Rd
Alpha St
605
Los Angeles
Long Beach

0 800 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9x

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0 800 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9y

- Biological Study Area

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Permanent Impacts
- Temporary Impacts

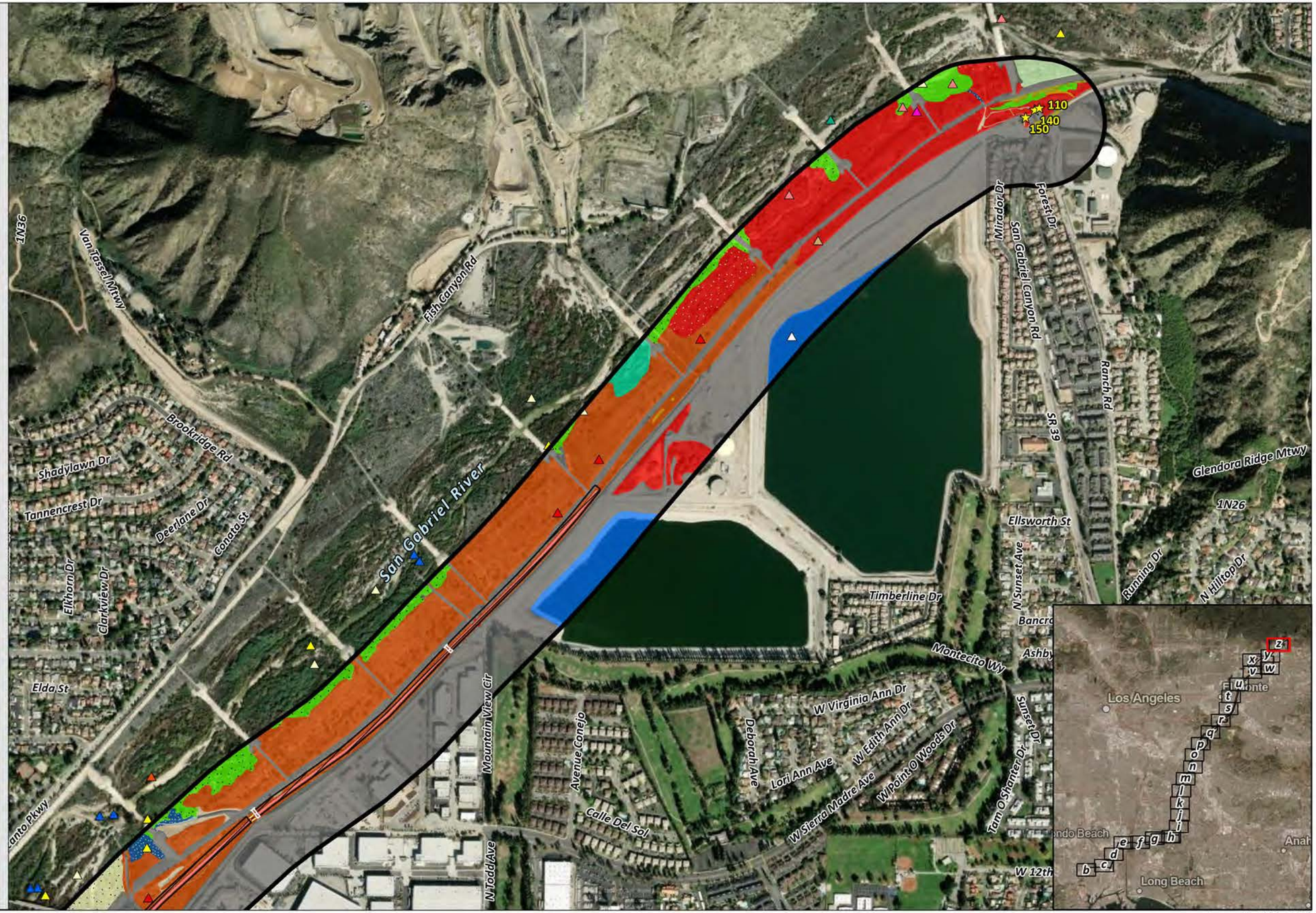
Vegetation and Land Cover Types

- Alluvial Fan Sage Scrub
- Coastal Sage Scrub
- Coastal Sage Scrub- Disturbed
- Developed
- Disturbed Habitat
- Disturbed Wetland
- Mule Fat Scrub
- Non-native Grassland (Broadleaf Dominated)
- Non-native Riparian
- Non-native Vegetation
- Open Water
- Southern Riparian Forest
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Unvegetated Habitat

Special-status Plant Species*

- Coulter's Matilija Poppy
- Coastal California Gnatcatcher
- Least Bell's Vireo
- Willow Flycatcher
- Cooper's Hawk
- Lawrence's Goldfinch
- Yellow-breasted Chat
- Yellow Warbler
- Osprey
- Southern California Rufous-crowned Sparrow
- Vaux's Swift

**All observed individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.*



0 800 Feet

Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

Vegetation and Sensitive Species Impacts

Figure 5.2-9z

Sensitive Biological Resources

Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the CEQA Guidelines.

The CDFW evaluates the rarity of natural communities using the NatureServe's Heritage Methodology (Faber-Langendoen et al. 2012) in which communities are given a G (global) and S (State) rank based on their degree of imperilment (as measured by rarity, trends, and threats). Communities are assigned an overall rank of 1 through 5, with 1 being considered very rare and threatened and 5 being considered demonstrably secure. Communities with a Rarity Ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable) are considered sensitive by the CDFW.

Two sensitive vegetation communities occur within the BSA: Goodding's willow – red willow riparian woodland and forest (southern riparian forest) and scale broom scrub (alluvial fan sage scrub), both of which have a ranking of S3. These sensitive vegetation communities and their occurrence within the BSA are summarized in **Table 5.2-3**.

Other vegetation communities/habitats and land cover types occur within the BSA but are not considered sensitive because they have a ranking of S4 or S5 or they do not meet the definition of sensitive habitat as defined by the CEQA Guidelines. These vegetation communities/habitats and land cover types and their occurrence within the BSA are also summarized in **Table 5.2-3**.

Table 5.2-3
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Wetlands			
Goodding's Willow – Red Willow Riparian Woodland and Forest (Southern Riparian Forest)	S3	Winter-deciduous trees that require water near the soil surface. In this alliance, Goodding's willow (*Salix gooddingii*) or red willow (*Salix laevigata*) are dominant or co-dominant species forming an open to continuous tree canopy with other riparian tree species, including cottonwood (*Populus* sp.) and western sycamore (*Platanus racemosa*). Understory species include mule fat (*Baccharis salicifolia*), sandbar willow (*Salix exigua*), California wild rose (*Rosa californica*), black elderberry (*Sambucus nigra*), and Himalayan blackberry (*Rubus armeniacus*). This vegetation community occurs along large rivers, moist canyons and drainage bottoms, floodplains, and lake edges.	Primarily occurs along natural-bottomed portions of the San Gabriel River and San Jose Creek.
Mule Fat Thickets (Mule Fat Scrub)	S4	A depauperate, shrubby riparian scrub community dominated by mule fat. Black elderberry, arrow weed (*Pluchea sericea*), or upland shrub and herbs may be interspersed with mule fat, but mule fat occupies at least 30 to 50 percent of the shrub canopy. Emergent trees may also be present at low cover including small willows (*Salix* spp.), tamarisk (*Tamarix* spp.), cottonwoods, and western sycamore. This habitat association forms in seasonally or intermittently flooded habitats such as canyon bottoms, floodplains, irrigation ditches, lake margins, and stream channels.	Occurs as small, scattered patches along the San Gabriel River and isolated upland areas.
Arroyo Willow Thickets (Southern Willow Scrub)	S4	Stands of arroyo willows that form an open to continuous canopy of shrubby willows. Scattered emergent cottonwood, western sycamore, black elderberry, and willow trees may occur at a trace cover. This vegetation community occurs on loose, sandy or fine gravelly alluvium soils along streams, drainages, and slope seeps.	Occurs in association with the Dominguez Gap Wetlands located east and paralleling the Los Angeles River and as scattered to dense stands along the San Gabriel River.

[1] Rarity Ranking is from CDFW's Natural Communities List (2022d). Communities are assigned an overall state (S) rank of 1 through 5, with 1 being considered very rare and threatened and 5 being considered demonstrably secure.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Cattail Marshes (Freshwater Marsh)	S5	Dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, as well as freshwater or brackish marshes. Cattails (*Typha* spp.) occur as the dominant or co-dominant species in association with bulrushes (*Schoenoplectus* sp.), umbrella sedges (*Cyperus* sp.), rushes (*Juncus* sp.), and spike-sedge (*Eleocharis* sp.). This community typically grows in semi- or permanently flooded areas on clay or silty soils.	Occurs near the mouth of culverts within the San Gabriel River and along drainage features east of the Los Angeles River and within the Santa Fe Spreading Grounds.
Tamarisk Thickets (Tamarisk Scrub)	SNA[2]	Tamarisk thickets, or tamarisk scrub, typically comprises shrubs and/or small trees of exotic tamarisk species but may also contain willows, salt bushes (*Atriplex* spp.), and salt grass (*Distichlis spicata*). Tamarisk can form dense, monotypic stands along streams, lake margins, and floodplains in areas where high evaporation rates increase the salinity level of the soil. Tamarisk can obtain water from underground water tables. Because of its deep root system and high transpiration rates, tamarisk can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. Also, as a prolific seeder, it may rapidly displace native species.	Occurs in patches along the San Gabriel River.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Giant Reed Marshes (Arundo-dominated Riparian)	SNA	Giant reed marshes, or arundo-dominated riparian, consist of densely vegetated riparian thickets dominated almost exclusively by giant reed (*Arundo donax*). Giant reed is a large, aggressive, perennial rye grass that is an introduced, invasive, non-native plant species. This plant may form dense floating mats in riparian areas, streams, ditches, and coastal marshes. Propagation occurs when parts of the plant detach and are carried downstream. Stands may be up to approximately 25 feet in height and exclude many native trees, especially willows. This community occurs along disturbed water courses. This community is less dominant in drier riparian systems that may be dominated by mule fat or arrow weed.	A patch occurs along the San Gabriel River downstream of its confluence with San Jose Creek.
Non-Native Riparian	None	Non-native riparian consists of densely vegetated riparian thickets dominated (greater than 50 percent) by non-native, invasive species such as giant reed, pampas grass (*Cortaderia* sp.), eucalyptus (*Eucalyptus* spp.), Canary Island date palm (*Phoenix canariensis*), castor bean (*Ricinus communis*), Brazilian pepper tree (*Schinus terebinthifolius*), tamarisk, and Mexican fan palm (*Washingtonia robusta*). It occurs in a variety of wetland habitats; often where prior disturbances have occurred.	Occurs along a drainage feature west of Alameda Street and as scattered patches along the San Gabriel River.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Disturbed Wetland	None	Disturbed wetland is dominated by exotic wetland species that invade areas that are permanently or periodically inundated by water and have been significantly modified by human activity. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Characteristic species of disturbed wetlands include giant reed, tamarisk, wild celery (*Apium graveolens*), Bermuda grass (*Cynodon dactylon*), umbrella sedge (*Cyperus involucratus*), Italian ryegrass (*Festuca perennis*), perennial pepperweed (*Lepidium latifolium*), wild radish (*Raphanus sativus*), curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), and a variety of native or exotic wetland plants.	Occurs along the San Gabriel River and is the dominant vegetation community along the natural-bottomed portion of the San Gabriel River downstream of the Santa Fe Dam Recreation Area. It also occurs within the Santa Fe Dam Spillway, Santa Fe Spreading Grounds, and Compton Creek.
Open Water	None	Open water is made up of year-round bodies of fresh water (extremely low salinity) in the form of lakes, streams, ponds, or rivers. This includes those portions of water bodies that are usually covered by water and contain less than 10 percent vegetative cover.	Occurs within concreted and unvegetated portions of the Dominguez Channel, Los Angeles River, San Jose Creek, Walnut Creek, and San Gabriel River; inundated portions of the San Gabriel Coastal Spreading Grounds; and concrete storm conveyance features.
Unvegetated Habitat – Streambed	None	Unvegetated habitat (streambed) includes areas that are unvegetated and within the corridor of a stream or river. The stream or river may be ephemeral or intermittent, making open water an inappropriate name for this habitat type at the time vegetation mapping was conducted; however, these areas may contain water depending on the time of year.	Occurs in association with unnamed drainage features, Compton Creek, Walnut Creek, and San Gabriel River.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Uplands			
Scale Broom Scrub (Alluvial Fan Sage Scrub)	S3	Scale broom scrub, or alluvial fan sage scrub, is a unique vegetation type that occurs on outwash fans and riverine deposits along the coastal side of major mountains in southern California. It grows on sandy, rocky alluvial deposits by streams that periodically flood during infrequent torrential storms. This periodic flooding results in the removal of the vegetation on the adjacent terraces. During less severe flooding, the vegetation on the more protected terraces is not removed. This pattern of periodic flooding of various intensities results in a mosaic of plant communities, from pioneer communities that occur in the washes and are subjected to frequent flooding and scouring, to intermediate and mature communities that are exposed to relatively less frequent flooding. These pioneer and intermediate seral communities are dependent upon the natural processes of periodic severe flooding. The presence of scale-broom (*Lepidospartum squamatum*) is indicative of this vegetation community. Associated species may include white sage, brittlebush, California buckwheat, and yerba santa (*Eriodictyon crassifolium* and *Eriodictyon trichocalyx*).	Occurs along the upper reach of the San Gabriel River north of I-210 and downstream of Santa Fe Dam Spillway.
Coast Live Oak Woodland and Forest (Coast Live Oak Woodland)	S4	Coast live oak woodland is an open to dense evergreen woodland or forest community, dominated by coast live oak (*Quercus agrifolia*) that may reach a height of 35 to 80 feet. The shrub layer consists of toyon (*Heteromeles arbutifolia*), black elderberry, fuchsia-flowered gooseberry (*Ribes speciosum*), and poison oak (*Toxicodendron diversilobum*). A dense herbaceous understory is dominated by miner's lettuce (*Claytonia perfoliata*) and chickweed (*Stellaria media*). This community occurs along the coastal foothills of the Peninsular Ranges, typically on north-facing slopes and shaded ravines.	Occurs within an SCE easement in the central portion of the BSA, just north of Amigo Park.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Laurel Sumac Scrub (Coastal Sage Scrub – Laurel Sumac-Dominated)	S4	Laurel sumac scrub, or laurel sumac-dominated coastal sage scrub, is a subtype of coastal sage scrub that is dominated by laurel sumac. It often occurs on steep slopes with shallow soils of fine texture.	Occurs east of the Santa Fe Dam Spillway along a slope that borders I-605.
California Buckwheat Association (Coastal Sage Scrub)	S5	California buckwheat scrub, or coastal sage scrub, is one of the major shrub types that occurs in Southern California, occupying xeric sites characterized by shallow soils. There are several distinct coastal sage scrub geographical associations (e.g., northern, central, Venturan, Diegan, Riversidian) that are recognized along the California coast and may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within coastal sage scrub include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), deerweed (*Acmispon glaber*), laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*).	Patches occur to the east of Los Angeles River and north of Compton Creek along recreational trails, within and around the Santa Fe Spreading Grounds, and along the upstream portion of the San Gabriel River near the foothills of the San Gabriel Mountains.
Wild Oats and Annual Brome Grasslands (Non-Native Grassland)	SNA	Wild oats and annual brome grasslands, or non-native grassland, are a mixture of annual grasses and other herbaceous species. Annual species comprise from 50 percent to more than 90 percent of the vegetative cover, and most annuals are non-native species. The grasses are typically less than three feet in height and form a continuous or open cover. Most of the non-native grasses originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. Dominant species include wild oat (*Avena* spp.), purple false brome (*Brachypodium distachyon*), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and barley (*Hordeum* ssp.).	Occurs within the SCE easement areas.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Upland Mustard Fields (Non-Native Grassland – Broadleaf-Dominated)	SNA	Upland mustard fields, or non-native grassland (broadleaf-dominated), includes stands of non-native annual mustards that occupy fallow fields, grasslands, roadsides, slopes, and disturbed areas. Dominant species include short-pod mustard (*Hirschfeldia incana*), filaree (*Erodium* spp.), and annual non-native grasses (*Bromus* spp.).	Occurs primarily along portions of the San Gabriel River.
Eucalyptus Groves (Eucalyptus Woodland)	SNA	Eucalyptus groves, or eucalyptus woodland, are dominated by eucalyptus, an introduced genus that produces a large amount of leaf and bark litter. The chemical and physical characteristics of this litter, combined with the shading effects of the trees, limit the ability of other species to grow in the understory, thereby decreasing floristic diversity. If sufficient moisture is available, eucalyptus becomes naturalized and can reproduce and expand its cover.	Occurs primarily along roadsides.
Non-native Vegetation	None	Non-native vegetation is a category describing stands of naturalized trees and shrubs, including acacia or wattle (*Acacia sp.*), hottentot fig (*Carpobrotus edulis*), fountain grass (*Pennisetum setaceum*), peppertree (*Schinus sp.*) and tree tobacco (*Nicotiana glauca*). Many of these species are also used in landscaping.	Occurs primarily within or adjacent to disturbed and developed areas where non-native species have established on undeveloped lots and non-landscaped slopes bordering freeways, roadsides, and similar areas. Also found in patches along the embankment of the San Gabriel River.
Ornamental Vegetation	None	Ornamental vegetation describes stands of native or non-native planted species for the purpose of landscaping. These areas are actively irrigated and maintained and do not represent naturally occurring stands of vegetation. Within the BSA, ornamental vegetation includes areas where bush sunflower (*Encelia californica*), Matilija poppy (*Romneya* spp.), San Diego marsh-elder (*Iva hayesiana*), and Torrey pine (*Pinus torreyana* ssp. *torreyana*) have been planted in association with ornamental species such as acacia, Aleppo pine (*Pinus halepensis*), and rock rose (*Cistus* sp.).	Occurs at the San Gabriel Coastal Spreading Grounds.

Table 5.2-3 (cont.)
SUMMARY OF VEGETATION COMMUNITIES/LAND COVER TYPES MAPPED WITHIN THE BSA

Vegetation Communities/ Land Cover Types	Status/ Ranking[1]	Description	Occurrence within BSA
Disturbed Habitat	None	Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present disturbance.	Occurs as cleared lots, trails, bare ground, and spoil piles throughout much of the BSA.
Urban/Developed	None	Urban/developed land includes areas that have been constructed upon or otherwise covered with a permanent, unnatural surface and may include, for example, structures, pavement, irrigated landscaping, or hardscape to the extent that no natural land is evident. These areas no longer support native or naturalized vegetation.	The BSA is largely comprised of developed areas, including residential and commercial development, industrial areas, roadways, brow ditches and storm drain culverts, and paved lots.

[1] Rarity Ranking is from CDFW's Natural Communities List (2022d). Communities are assigned an overall state (S) rank of 1 through 5, with 1 being considered very rare and threatened and 5 being considered demonstrably secure.

[2] SNA = Semi-Natural Alliance. Semi-natural Alliances are strongly dominated by non-native plants that have become naturalized in the state. These alliances are not considered sensitive.

Special-Status Plant Species

Special-status plant species have been afforded special-status and/or recognition by the USFWS and/or CDFW. They could be officially listed by the federal government or the state as endangered, threatened, or rare, or may be a candidate for federal or state listing as endangered, threatened, or rare. They may also be included in the CNPS Inventory of Rare and Endangered Plants. All plants with a California Rare Plant Rank (CRPR) of 1 and 2, and some plants with a CRPR of 3 or 4, may fall under the definition of endangered, threatened, or rare provided in CEQA Guidelines Section 15380. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. Special-status species are those considered unusual or limited in that they are: (1) only found in the region; (2) a local representative of a species or association of species not otherwise found in the region; or (3) severely depleted within their ranges or within the region.

Three special-status plant species were observed within the BSA: Coulter's matilija poppy (*Romneya coulteri*), San Diego marsh-elder (*Iva hayesiana*), and Torrey pine (*Pinus torreyana* ssp. *torreyana*). However, all individuals of these species were recorded in areas over 100 feet away from the backbone alignment and outside of the limit of the proposed construction areas (**Figures 5.2-9m** and **5.2-9z**). Additionally, all observed individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations. As such, these individuals are not considered sensitive. These plant species and their occurrence in the BSA are summarized in **Table 5.2-4** and further discussed in Appendix H of the Biological Resources Technical Report (Appendix C of this EIR).

An additional seven special-status plant species were not observed within the BSA but were determined to have high potential to occur based on a combination of factors including the presence of suitable soils, hydrology, and/or habitat; special-status species database occurrences within the immediate project vicinity; and recently reported observations made by others, including citizen science databases such as Calflora (2022). These special-status plant species with high potential to occur within the BSA are identified in **Table 5.2-5** and further discussed in Appendix H of the Biological Resources Technical Report (Appendix C of this EIR).

Table 5.2-4
SUMMARY OF SPECIAL-STATUS PLANT SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Coulter's matilija poppy (*Romneya coulteri*)	--/-- CRPR 4.2	Found along the coastal regions from San Luis Obispo County south to San Diego County and east to western Riverside and San Bernardino counties.	Perennial herb. Occurs in dry washes and canyons in coastal scrub chaparral, often in burned areas. Flowering period: March to August. Elevation: 65 to 3,900 feet (20 to 1,200 meters).	Outside of construction limits. Cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.
San Diego marsh-elder (*Iva hayesiana*)	--/-- CRPR 2B.2	San Diego County.	Perennial herb. Found in alkaline flats, depressions, and streambanks within wetland habitats. Flowering period: April to October. Elevation: 30 to 1,640 feet (10 to 500 meters).	Outside of construction limits. Cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.
Torrey pine (*Pinus torreyana* ssp. *torreyana*).	--/-- CRPR 1B.2	Found in San Bernardino and San Diego counties.	Perennial evergreen tree. Grows on sandstone soils within chaparral and closed-cone coniferous forest. Flowering period: none. Elevation: 95 to 525 feet (30 to 160 meters).	Outside of construction limits. Cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations.

[1] Listing codes as follows: CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

Table 5.2-5
SUMMARY OF SPECIAL-STATUS PLANT SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Nevin's barberry (*Berberis nevinii*	FE/SE CRPR 1B.1	Found in Los Angeles, San Bernardino, Riverside, and San Diego counties.	Perennial evergreen shrub. Occurs in chaparral, cismontane woodland, coastal scrub, and riparian scrub on sandy or gravelly soils. Flowering period: March to June. Elevation: 225 to 2,705 feet (70 to 825 meters).	Suitable habitats and soils occur within the northern portion of the BSA along the San Gabriel River and the species has been recently observed in the Whittier Narrows Recreation/Natural Area.
Plummer's mariposa lily (*Calochortus plummerae*)	--/-- CRPR 4.2	Found in Ventura, Los Angeles, Orange, Riverside, and San Bernardino counties.	Perennial herb. Grows on granitic and rocky soils within chaparral, coastal sage scrub, cismontane woodland, lower montane coniferous forest, and grassland. Flowering period: May to July. Elevation: 325 to 5,580 feet (100 to 1,700 meters).	Suitable habitat occurs in the northern portion of the BSA along the San Gabriel River and there are several reported occurrences of the species in the project vicinity including directly west of the BSA in Fish Canyon.
Southern California black walnut (*Juglans californica*)	--/-- CRPR 4.2	Found along the southern California coast from Monterey County south to San Diego County and east into western Transverse and Peninsular Ranges, including San Jacinto and San Gabriel Mountains.	Perennial tree. Grows in alluvial soils within coastal sage scrub, chaparral, riparian woodlands, and cismontane woodlands. Flowering period: March to August. Elevation: 165 to 2,955 feet (50 to 900 meters).	Suitable habitats and soils occur within the BSA along the San Gabriel River and the species has been recently documented to occur in the Whittier Narrows Recreation/Natural Area.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	--/-- CRPR 4.3	Throughout California.	Annual herb. Grows in openings of sage scrub and chaparral at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Also found in disturbed areas. Flowering period: March to June. Elevation: below 9,186 feet (2,800 meters).	Suitable coastal sage scrub occurs within the BSA and the species was reportedly observed in the northern portion of the BSA at an abandoned gravel pit north of I-210 and east of the San Gabriel River in 1997.

Table 5.2-5 (cont.)
SUMMARY OF SPECIAL-STATUS PLANT SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Engelmann oak (*Quercus engelmannii*)	--/-- CRPR 4.2	Found from Los Angeles County south to San Diego County, western Riverside and San Bernardino counties, and the Channel Islands.	Perennial tree. Occurs on slopes and foothills within grasslands, chaparral, oak woodland, and riparian woodlands. Flowering period: March to June. Elevation: 160 to 4,300 feet (50 to 1,300 meters).	Suitable habitat occurs within the BSA and there are reported occurrences of the species within the project vicinity, primarily at the foothills of the San Gabriel Mountains.
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	--/-- CRPR 1A	Found in Los Angeles and San Bernadino counties.	Perennial shrub. Occurs in riparian woodland. Flowering period: February to April. Elevation: 215 to 985 feet (65 to 300 meters).	Suitable riparian habitat occurs within the BSA along the San Gabriel River and there are reported occurrences of the species in the project vicinity, particularly near the Whittier Narrows Recreation/Natural Area.
Sonoran maiden fern *Pelazoneuron puberulum* var. *sonorense*)	--/-- CRPR 2B.2	Found in Santa Barbara, Ventura, Los Angeles, San Bernadino, and Riverside, and San Diego counties.	Perennial rhizomatous herb. Occurs in meadows, seeps, and streams. Spore period: January to September. Elevation: 165 to 2,000 feet (50 to 610 meters).	Suitable habitat occurs at the northern end of the BSA along the San Gabriel River and there are reported occurrences of the species in the project vicinity just north of the BSA and west near Fish Canyon.

[1] Listing codes as follows: F = Federal; S = State of California; E = Endangered; CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

An additional 51 special-status plant species were analyzed for potential to occur within the BSA based on the results of the special-status species database searches that were conducted within a 5-mile buffer of the project-level facilities and components (for CNDDB and USFWS) or USGS quadrangle search (for CNPS). These species were not observed during biological surveys and were not determined to have a high potential to occur based on geographic range, elevation, lack of suitable habitat, and/or presence of dense urban and residential development. These species are listed in Appendix H of the BRTR (Appendix C of this EIR).

Special-Status Animal Species

Special-status animal species include those that have been afforded special-status and/or recognition by the USFWS and/or CDFW. They could be officially listed by the federal government or the state as endangered, threatened, or rare, or may be a candidate for federal or state listing as endangered, threatened, or rare. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, in most cases due to habitat loss.

Seventeen special-status animal species were observed within or adjacent to the BSA, or observed flying over the BSA, during biological surveys. These species and their occurrence within the BSA are summarized below in alphabetical order in **Table 5.2-6** and depicted on **Figures 5.2-9a** through **5.2-9z**. Status codes are defined in Appendix J of the BRTR (Appendix C of this EIR).

Fifteen special-status animal species that were not observed but have high potential to occur within the BSA include: Crotch's bumble bee, arroyo chub (*Gila orcuttii*), Santa Ana speckled dace (*Rhinichthys osculus*), California newt (*Taricha torosa*), San Diegan legless lizard (*Anniella stebbinsi*), two-striped garter snake (*Thamnophis hammondii*), burrowing owl, sharp-shinned hawk (*Accipiter striatus*), Costa's hummingbird (*Calypte costae*), merlin (*Falco columbarius*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus frantzii*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*).

These 15 special-status animal species that were not observed were determined to have high potential to occur based on a combination of the following factors: sensitive species database occurrences (CNDDB and USFWS) within the project vicinity; presence of suitable habitat within the BSA; verified recent observations made by others, including citizen science databases such as eBird (2022) and iNaturalist (2024); appropriate soils; and/or known wintering and breeding ranges, based on a literature review. These species are further summarized below in alphabetical order by taxon in **Table 5.2-7** and are discussed in Appendix I of the BRTR (Appendix C of the EIR).

Table 5.2-6
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Invertebrates				
Monarch butterfly (*Danaus plexippus*)	FC/--	The population west of the Rocky Mountains migrates to, and overwinters, along the coast of Central and Southern California. Populations include migrant, wintering visitor, and year-round resident.	Inhabits a wide variety of open habitats including fields, meadows, marshes, and roadsides and roosting on wind-protected tree groves (such as eucalyptus [*Eucalyptus* spp.], Monterey pine [*Pinus radiata*], cypress [*Hesperocyparis* sp.]), with nectar and water sources nearby. Breeds in areas that have a suitable abundance of their larval host plant, milkweed (*Asclepias* sp.).	Individuals observed flying within plant nursery areas east of the San Gabriel River and north of San Jose Creek on multiple occasions. Species expected to occur as a migrant, wintering visitor, and year-round resident within BSA. Species known to overwinter within Los Angeles County, primarily along coastal regions within canyons, parks, and cemeteries. However, there are no known overwintering sites within the BSA (Xerces Society 2024). Additionally, breeding monarch butterflies are not expected to occur within the project's direct impact areas as the species' larval host plant was not observed during the project's biological surveys.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; C = Candidate; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; WL = Watch List

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Reptiles				
San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*)	--/-- CDFW SSC	Occurs along the coastal region of Southern California from San Luis Obispo south to San Diego County.	Inhabits open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	Single individual was observed east of Santa Fe Dam Spillway in coastal sage scrub habitat.
Birds				
American white pelican (*Pelecanus erythrorhynchos*)	--/-- USFWS BCC CDFW SSC	Mainly an overwintering visitor to California along the coast and lowlands of Central California, although also winters at the Salton Sea in Imperial County.	Nests in colonies on isolated islands of freshwater lakes and overwinters at marine estuaries and inland lakes where suitable habitat for feeding, loafing, and roosting is present.	Several individuals observed loafing and foraging within the San Gabriel River near its confluence with San Jose Creek. Species is expected to occur as a migrant and wintering visitor but is not known to breed within region.
California horned lark (*Eremophila alpestris actia*)	--/-- CDFW WL	In California, occurs along the coastal ranges from San Joaquin Valley south to U.S./Mexico border.	Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.	Several individuals observed along western access road that borders Santa Fe Dam Spillway. Suitable breeding habitat occurs within BSA.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/-- CDFW SSC	Year-round resident of California occurring from Ventura County south to San Diego County, and east within the western portions of San Bernardino and Riverside counties.	Typically occurs in arid, open sage scrub habitats on gentle slopes and hillsides to relatively flat areas at elevations below 3,000 feet. Composition of sage scrub in which gnatcatchers are found varies, though California sagebrush is typically present as dominant or co-dominant species.	Two CAGN pairs and three individual male CAGN detected during 2022 protocol-level survey effort (Appendix C of the BRTR [Appendix C of this EIR]). All CAGN observed within coastal sage scrub and alluvial fan sage scrub habitat located north of I-210 and along the San Gabriel River Trail. Suitable breeding habitat occurs within BSA.
Cooper's hawk (*Astur cooperii*)	--/-- CDFW WL	In California, the species breeds from Siskiyou County south to San Diego County and east towards Owens Valley at elevations below 9,000 feet.	Inhabits oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests. Increasingly found in suburban and urban areas. Nests within dense woodlands and forests and isolated trees in open areas.	Multiple individuals observed throughout BSA along the San Gabriel River and within residential and urban areas. Suitable breeding habitat occurs within BSA.
Double-crested cormorant (*Nannopterum auritum*)	--/-- CDFW WL	Year-round resident along the entire coast of California and also occurring east of the coast within the Central Valley, lower Colorado River, and Salton Sea.	Inhabits fresh and saltwater estuaries, and inland lakes with suitable places for feeding, resting, loafing, and nighttime roosts.	Multiple individuals observed loafing and foraging within the San Gabriel River near its confluence with San Jose Creek. Suitable breeding habitat occurs within BSA though no breeding colonies were observed during biological surveys.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Lawrence's goldfinch (*Spinus lawrencei*)	--/-- USFWS BCC	Resident of California breeding from Tehama, Shasta, and Trinity counties to the foothills surrounding Central Valley, south through the southern Coast Range to Santa Barbara County continuing into San Diego County and east to the western edge of the southern Mojave and Colorado Deserts.	Inhabits arid and open woodlands adjacent to scrub or chaparral habitats, grasslands or meadows, and water resources such as a stream, pond, or lake from sea level up to 10,000 feet.	Several individuals observed in the northern portion of the BSA east of the San Gabriel River. Suitable breeding habitat occurs within BSA, and species is known to be highly nomadic.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Least Bell's vireo (*Vireo bellii pusillus*)	FE/SE	In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside counties.	Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. The species can be tolerant of the presence of non-native species such as tamarisk.	Total of 13 male LBVIs detected during 2022 modified protocol surveys (Appendix D of the BRTR [Appendix C]). Nine males observed in central portion of BSA within riparian habitat along the San Gabriel River near its confluence with San Jose Creek, and along San Jose Creek. Three males detected in northern portion of the BSA, north of Huntington Drive, within riparian habitat along the San Gabriel River. One LBVI incidentally observed during biological surveys south of Huntington Drive. One pair of LBVI detected during the 2023 protocol surveys within riparian habitat along unnamed tributary to the San Gabriel River located east of I-605 near Whittier Narrows Natural Area between Peck Road and Rose Hills Road. A single male LBVI was detected during 2024 protocol surveys in a patch of castor bean located east of the San Gabriel River, approximately 0.3 mile north of Slauson Avenue. The male was only observed during the first survey and was presumed to be moving through the area.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Loggerhead shrike (*Lanius ludovicianus*)	--/-- CDFW SSC	Found year-round within California throughout the foothills and lowlands with winter migrants found coastally north of Mendocino County.	Inhabits a variety of habitats and forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral, and beach with scattered shrubs.	Single individual observed within northern portion of BSA in coastal sage scrub habitat located west of the San Gabriel River, just north of I-210. Suitable breeding habitat occurs within BSA.
Osprey (*Pandion haliaetus*)	--/-- CDFW WL	Within California, breeding populations reside in the Cascade and Sierra Nevada ranges, though small numbers of the species also breed within San Diego County. Although widely seen on the coast, rare transients can occur in the interior portions of Southern California.	Restricted to large water bodies such as rivers, lakes, and reservoirs supporting fish with suitable nesting habitat such as rocky pinnacles or large trees and snags. Builds large nests, often in dead tops of older trees and man-made structures.	Multiple individuals observed flying over BSA on multiple occasions, primarily in relation to open water areas of the San Gabriel River. Suitable foraging and breeding habitat occurs within BSA.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	--/-- CDFW WL	Year-round resident of southwestern California occurring from Santa Barbara County south to San Diego County at elevations below 5,000 feet.	Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush. Generally, absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.	Detected at northern end of BSA north of I-210 and west of the San Gabriel River Trail in coastal sage scrub habitat. Suitable breeding habitat occurs within BSA.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Vaux's swift (*Chaetura vauxi*)	--/-- CDFW SSC	Occurs as a migrant and summer resident of California along a narrow coastal belt from the Oregon border south to Santa Cruz County, and in the Cascades and Sierra Nevada ranges.	Found in redwood and Douglas-fir Forest habitats. Nests in tree cavities but can also be found on artificial structures such as chimneys. Fairly common spring and fall migrant throughout the state, though a few individuals may winter irregularly in the coastal lowlands of southern California.	Multiple individuals observed on several occasions during spring flying overhead in northern portion of BSA north of I-210 along the San Gabriel River. Species expected to occur as migrant but is not known to breed within the region.
White-faced ibis (*Plegadis chihi*)	--/-- CDFW WL	Uncommon summer resident in sections of Southern California, rare visitor in the Central Valley, and local wintering visitor along coast.	Prefers to feed in fresh emergent wetlands, shallow waters associated with lakes, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland.	Several individuals observed foraging along the San Gabriel River just south of its confluence with San Jose Creek. Species is expected to occur as a migrant and wintering visitor but is not known to breed within region.
Willow flycatcher (*Empidonax traillii*)[2]	--/SE	Migratory species that breeds within riparian habitat throughout much of the U.S. and winters in Central and South America. Three subspecies can be found in California: Great Basin willow flycatcher (*E.t. adastus*), little willow flycatcher (*E.t. brewsteri*), and SWFL (*E.t. extimus*). Great Basin willow flycatcher breeds in northeastern California, east of the Cascade and Sierra Nevada ranges.	Extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters.	Four migrant willow flycatchers (WIFLs) detected on May 17, 2022, during protocol-level surveys (Appendix E of the BRTR [Appendix C]). All detections occurred in northern portion of BSA, within riparian habitat along the San Gabriel River north of Huntington Drive. Subspecies of WIFL cannot be identified based on physical appearance or vocalizations. Therefore, subspecies identity cannot be determined until mid-June when the majority of individuals are presumed to have completed

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
		Little willow flycatcher breeds in Central and Northern California, west of Cascade and Sierra Nevada ranges, to the north of Tulare County. SWFL breeds in Central and Southern California, with the northernmost populations occurring in Kern and Inyo counties.		migration to breeding grounds. As all observations of WIFL occurred during the first survey visit in May, these individuals are presumed to be migrating individuals and cannot be identified as SWFL, the subspecies that breeds in Southern California as these individuals could belong to one of the other two subspecies of WIFL that breed in Central and Northern California regions. No breeding SWFL detected during the survey effort and no documented breeding occurrences of SWFL occur along the San Gabriel River. Potential for SWFL to occur within the BSA is low.
Yellow-breasted chat (*Icteria virens*)	--/-- CDFW SSC	In California, occurs as a migrant and summer resident breeding from the coastal regions in Northern California, east of the Cascades, and throughout the central and southern portions of the state.	Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.	Several individuals observed within riparian habitat along the San Gabriel River to the north of I-210 and at its confluence with San Jose Creek. Suitable breeding habitat occurs within BSA.

Table 5.2-6 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES OBSERVED WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Occurrence within BSA
Yellow warbler (*Setophaga petechia*)	--/-- USFWS BCC CDFW SSC	Migrant and summer resident breeding throughout California at elevations below 8,500 feet, excluding most of the Mojave Desert, and all of the Colorado Desert.	Breeds in riparian areas dominated by willows and cottonwoods, near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests at higher elevation areas.	Multiple individuals observed in association with riparian habitat along the San Gabriel River and San Jose Creek along with unnamed drainages, and in landscaped areas including at the San Gabriel Coastal Spreading Basins that provide suitable foraging habitat for migrating individuals. Suitable breeding habitat occurs within BSA.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; C = Candidate; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; WL = Watch List

[2] The SWFL was not observed within the BSA during project surveys but is discussed within the context of WIFL as SWFL is the subspecies of WIFL that breeds within the Southern California region. The SWFL was determined to have a low potential to occur within the BSA.

Table 5.2-7
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Invertebrates				
Crotch's Bumble Bee (*Bombus crotchii*)	--/SCE	Found throughout southwestern California from the Central Valley south to the U.S./Mexico border.	Inhabits open grasslands and scrub habitats. Primarily nests underground and forages on a wide variety of flowers, but a short tongue renders it best suited to open flowers with short corollas. Most commonly observed on flowering species in the Fabaceae, Asteraceae, and Lamiaceae families. Occurrence has also been linked to habitats containing *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* genera.	Potentially suitable habitat occurs along the San Gabriel River and adjacent sage scrub habitats. Reported observations of the species occur within the vicinity.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Fish				
Arroyo chub (*Gila orcutti*)	--/-- CDFW SSC	Found in streams and rivers of Southern California including the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers, and Malibu and San Juan creeks. Historic range has been expanded through the introduction to streams along the coast as far north as Chorro Creek in San Luis Obispo County. Additional introductions have occurred within the Santa Ynez, Ventura, Santa Maria, Cuyama, Santa Clara, and Mojave River systems.	Habitats include slow-moving or backwater environments with mud or sand substrates, though can also occur in pool habitats with gravel, cobble, or boulder substrates.	There are several historic accounts of the species within the San Gabriel watershed and the species was observed within the San Gabriel River approximately 1.5 miles upstream of the BSA in 2003 during focused surveys conducted by CDFW. Suitable habitat within the BSA is limited to the San Gabriel River, specifically the portion upstream of Santa Fe Dam. The reach of the San Gabriel River downstream of Santa Fe Dam transitions between portions of dry streambed and flowing water, and is subject to controlled flows likely preventing the species from colonizing and occupying areas downstream of Santa Fe Dam.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Santa Ana speckled dace (*Rhinichthys osculus* ssp. 8)	--/-- CDFW SSC	Widely distributed species found in all major drainages in western North America. Historically inhabited streams in upland areas of Santa Ana, San Gabriel, and Los Angeles River systems but currently restricted to the headwaters of the Santa Ana and San Gabriel rivers and in Big Tujunga Creek.	Typically found in small perennial streams fed by cool springs. Usually observed in shallow, gravel- or cobble- dominated riffles with overhanging riparian vegetation. Preferred habitat includes pools in low-gradient streams with sandy to boulder substrates in slow-moving waters.	Documented occurrences of the species are located over 6 miles upstream of the BSA within the San Gabriel Mountains. Additional observations occur west of the San Gabriel Canyon Spreading Grounds within Fish Canyon Creek, approximately 1 mile north of its confluence with the San Gabriel River in 2002. Suitable habitat within the BSA is limited to the San Gabriel River, specifically the portion upstream of Santa Fe Dam. The reach of the San Gabriel River downstream of Santa Fe Dam transitions between portions of dry streambed and flowing water and is subject to controlled flows likely preventing the species from colonizing and occupying areas downstream of Santa Fe Dam.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Amphibians				
California newt (*Taricha torosa*)	--/-- CDFW SSC	This endemic California species is found along the coast and coastal range mountains from Mendocino County south to San Diego County. Populations appear to be highly fragmented. An isolated population occurs in the southern Sierra Nevada from the Kaweah River in Tulare County south to Breckenridge Mountain in northern Kern County.	Inhabits wet forests, oak woodlands, grasslands, and chaparral at elevations below 4,200 feet.	Recent occurrences of the species have been reported within the vicinity at the base of the San Gabriel Mountains. Potentially suitable habitat occurs within the northern portion of the BSA along the San Gabriel River.
Reptiles				
San Diegan legless lizard (*Anniella stebbinsi*)	--/-- CDFW SSC	Found throughout southern California from the Transverse Ranges south to the U.S./Mexico border.	Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens.	Potentially suitable habitat occurs along the San Gabriel River and adjacent sage scrub habitats. Reported observations of the species occur within the vicinity.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Two-striped garter snake (*Thamnophis hammondii*)	--/-- CDFW SSC	Found in California from Monterey County south along the coast to San Diego County at elevations below 7,000 feet.	Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows (*Salix* spp.) and other dense vegetation. Has also been found in stock ponds, and other artificially created aquatic habitats, if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.	Reported occurrences of the species occur immediately upstream of the BSA and suitable riparian habitat and aquatic resources occur in the northern portion of the BSA along the San Gabriel River within the San Gabriel Canyon Spreading Grounds.
Birds				
Sharp-shinned hawk (*Accipiter striatus*)	--/-- CDFW WL	Primarily winters and migrates throughout California. Breeding records located in the northern and central portions of the state, but breeding range in California is poorly known.	Breeds within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevation nesting in trees near openings. Wintering habitat similar to breeding habitat but more expansive to include suburban and agricultural areas.	The species would only occur as wintering and migrating individuals. Numerous eBird sightings of the species occur in the BSA. The BSA is located outside the species' known breeding range.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Burrowing owl (*Athene cunicularia*)	--/SCE USFWS BCC CDFW SSC	Found from Central California east to the Mojave Desert and south to coastal San Diego County.	Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Also occupies agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as the California ground squirrel (*Spermophilus beecheyi*). Will also utilize natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.	Low- to moderate-quality habitat within the BSA is comprised of non-native grasslands and disturbed habitat that contain potential burrows or other artificial structures suitable for burrowing, particularly within Southern California Edison easement areas. Reported occurrences of the species in the vicinity include overwintering and migratory owls at the Santa Fe Dam Recreation Area and San Gabriel Coastal Spreading Grounds; however, there are no recent breeding records. Overwintering and migratory owls may occur in the BSA, but breeding pairs are unlikely based on the lack of recent records.
Costa's hummingbird (*Calypte costae*)	--/-- USFWS BCC	Occurs year-round in deserts and xeric habitats of Southern California. Breeds along the coast in sage scrub and chaparral habitats from Santa Barbara County south to San Diego County, and east to desert regions of Inyo County and south to Imperial County.	Breeding habitat includes desert scrub, coastal sage scrub, and chaparral.	Suitable habitat occurs within the BSA and numerous eBird sightings of the species are reported within the project vicinity.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Merlin (*Falco columbarius*)	--/-- CDFW WL	Uncommon winter migrant in California occurring from September to May at elevations below 5,000 feet.	Often found in open woodland, grasslands, cultivated fields, marshes, estuaries, and coastal areas; rarely found in heavily wooded areas or over open deserts.	The species would only occur in the BSA as wintering and migrating individuals. Numerous eBird sightings of the species occur in the BSA. The BSA is located outside the species' known breeding range.
Mammals				
Pallid bat (*Antrozous pallidus*)	--/-- CDFW SSC	Locally common species found at low elevations in California.	Associated with arid and open habitats including grasslands, shrublands, woodlands, and forests, often with open water nearby. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts in bridges, caves, crevices, mines, and occasionally hollow trees and buildings. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.	Suitable habitat occurs in the northern portion of the BSA at the foothills of the San Gabriel Mountains where riparian habitat occurs along the San Gabriel River and adjacent steep hillsides provide suitable roosting habitat. Documented occurrences in the vicinity are located north of the BSA in the San Gabriel Mountains. In addition, this species has reportedly been detected east of the BSA in Puente Hills as part of bat surveys conducted for the Puente Hills Landfill Native Habitat Preservation Authority between 2005 to 2006.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Western mastiff bat (*Eumops perotis californicus*)	--/-- CDFW SSC	In California, occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert.	Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost high above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.	Suitable habitat occurs in the northern portion of the BSA at the foothills of the San Gabriel Mountains where riparian habitat occurs along the San Gabriel River and adjacent steep hillsides provide suitable roosting habitat; though, the species is also known to roost in buildings. Documented occurrences in the vicinity are located further north of the BSA in the San Gabriel Mountains. In addition, this species has reportedly been detected further west of the BSA in Griffith Park near the Los Angeles River as part of the Natural History Museum of Los Angeles backyard bat survey study and east of the BSA in Puente Hills as part of bat surveys conducted for the Puente Hills Landfill Native Habitat Preservation Authority between 2005 to 2006.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Western red bat (*Lasiurus frantzii*)	--/-- CDFW SSC	In California, locally common occurring from Shasta County south to San Diego County and west of the Cascade and Sierra Nevada ranges and deserts.	Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. This foliage-roosting species prefers heavily shaded areas that are open underneath.	Suitable riparian habitat occurs primarily along the San Gabriel River and San Jose River. The species has reportedly been detected further west of the BSA at the Natural History Museum of Los Angeles nature gardens as part of the Natural History Museum of Los Angeles backyard bat survey study, and east of the BSA near Turnbull Canyon as part of bat surveys conducted for the Puente Hills Landfill Native Habitat Preservation Authority between 2005 to 2006.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Western yellow bat (*Lasiurus xanthinus*)	--/-- CDFW SSC	Uncommon in California occurring from Los Angeles and San Bernardino counties south to the Mexican border.	Typically occurs in desert scrub habitats below 2,000 feet where palms are present including desert riparian, desert washes, and palm oasis, though has also been found in riparian habitats and developed areas outside of deserts. Roosts primarily on dead palm frond skirts of native and non-native fan palms but has also been observed in cottonwoods and yuccas.	Planted palms and riparian habitat along the San Gabriel River and San Jose Creek provide potential roosting and foraging habitat. Though there are few known records of the species within Los Angeles County, the species has reportedly been detected further west of the BSA near Kenneth Hahn State Recreation Area and Magic Johnson Park as part of the Natural History Museum of Los Angeles backyard bat survey study, and east of the BSA near Arroyo San Miguel in Puente Hills as part of bat surveys conducted for the Puente Hills Landfill Native Habitat Preservation Authority between 2005 to 2006.

Table 5.2-7 (cont.)
SUMMARY OF SPECIAL-STATUS ANIMAL SPECIES WITH HIGH POTENTIAL TO OCCUR WITHIN THE BSA

Common Name (Scientific Name)	Status[1] (FESA/CESA; Other)	Distribution	Habitat	Potential to Occur within BSA
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	--/-- CDFW SSC	Rare in California occurring from Los Angeles County east to San Bernardino County and south to San Diego County.	Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Sometimes roosts under tiled roofs and observed utilizing bat boxes. Habitat generalists foraging in grasslands, shrublands, riparian areas, oak woodlands, forests, meadows, and ponds favoring larger water bodies for drinking.	Suitable habitat occurs within the BSA, particularly in the northern portion at the foothills of the San Gabriel Mountains where riparian habitat occurs along the San Gabriel River and adjacent hillsides provide suitable roosting habitat; though, the species has also been found in residential areas. There are few documented occurrences of the species within the project vicinity, primarily within residential areas. The species was reportedly detected further east of the BSA in Puente Hills as part of bat surveys conducted for the Puente Hills Landfill Native Habitat Preservation Authority between 2005 to 2006.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare; P = Proposed; C = Candidate; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List.

Jurisdictional Waters and Wetlands

In the context of this assessment, jurisdictional waters and wetlands include waters of the U.S., including wetlands regulated by USACE pursuant to Section 404 of the Clean Water Act (CWA); waters of the state regulated by the Regional Water Quality Control Board (Regional Board) pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act; and/or the bed, bank, and channel of a stream (streambed) and associated riparian habitat regulated by the CDFW pursuant to Sections 1600 *et seq*. of the California Fish and Game Code (FGC). Although the BSA supports waters, wetlands, streambed, and riparian habitat that would be subject to USACE, Regional Board, and/or CDFW jurisdiction, the jurisdictional delineation study area occurred only in portions of the BSA where the backbone pipeline would occur outside of the road ROWs and where surface disturbances (i.e., trenched portions of the backbone pipeline) are anticipated to occur. Most of the backbone pipeline would be contained within existing road ROWs that lack jurisdictional features, and trenchless construction methods (i.e., pipe jacking, micro tunneling, and traditional tunneling), which have been incorporated into the project design, would largely avoid impacts to existing waters, wetlands, streambed, and riparian areas where they intersect the backbone pipeline. Therefore, though additional jurisdictional aquatic resources may be present within the BSA, areas located outside the anticipated direct impact area were not formally delineated.

Potential jurisdictional aquatic resources within the jurisdictional delineation study area include an unnamed intermittent drainage that has been channelized as part of flood control conveyance within the Santa Fe Spreading Grounds, an unnamed ephemeral drainage that has been channelized as part of flood control conveyance located north of Huntington Drive and east of the San Gabriel River Trail, and isolated pockets of mule fat scrub located north of Huntington Drive and east of the San Gabriel River Trail (**Figures 5.2-10a** through **5.2-10d**, **5.2-11a** through **5.2-11e**, and **5.2-12a** through **5.2-12d**). It should be noted that only the USACE, Regional Board, and CDFW can make a final determination of jurisdictional boundaries.

Wildlife Corridors and Linkages

Wildlife corridors connect otherwise isolated pieces of habitat and allow the movement or dispersal of plants and animals. Wildlife corridors can be local or regional in scale and may function in different ways, depending on species and time of year. Wildlife corridors represent areas where wildlife movement is concentrated due to natural or manufactured constraints. Local corridors provide access to resources such as food, water, and shelter within the framework of an animal's daily routine. Animals can use these corridors, such as hillsides and tributary drainages to main drainages, to travel among different habitats (e.g., riparian and upland habitats). Some animals require riparian habitat for breeding and upland habitat for burrowing. Regional corridors provide these functions and also link two or more large areas of open space. Regional corridors also provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations. A corridor is a specific route that is used for the movement and migration of species. Corridors may be different from a linkage in that they represent a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance. The BSA is not located within any linkages recognized by the South Coast Missing Linkages report (South Coast Wildlands 2008). However, portions of the BSA are located within or adjacent to regional open space areas that are recognized locally as habitat linkages.

Biological Study Area
Jurisdictional Delineation Study Area
Backbone Alignment
Open Trench
Tunnel

Area 2b (San Gabriel Canyon Spreading Grounds)
San Gabriel Canyon Spreading Grounds
Area 2a (San Gabriel Canyon Spreading Grounds)
Santa Fe Spreading Grounds
Area 1 (Santa Fe Dam)
Santa Fe Dam Spillway
San Gabriel Coastal Spreading Grounds
Dominguez Gap Wetlands
San Gabriel River
Los Angeles River
San Jose Creek
a
b
c
d

San Gabriel Wilderness Area
Los Angeles
La Cañada Flintridge
Burbank
Altadena
Sierra Madre
Glendale
Pasadena
Azusa
Glendora
San Gabriel
Alhambra
Rosemead
El Monte
West Covina
Covina
Monterey Park
Walnut City Parkland
South El Monte
East Los Angeles
Montebello
La Puente
Walnut
Huntington Park
Florence-Graham
Whittier
South Gate
Santa Fe Springs
Downey
La Habra
Lynwood
South Whittier
Norwalk
Bellflower
Cerritos
Buena Park
Fullerton
Yorba
Lakewood
Carson
Hawaiian Gardens
Anaheim
Lomita
Signal Hill
Orange
Long Beach
Garden Grove
Naval Weapons Station Seal Beach
Westminster
Santa Ana
Sunset Beach
Fountain Valley
Huntington Beach
Costa Mesa

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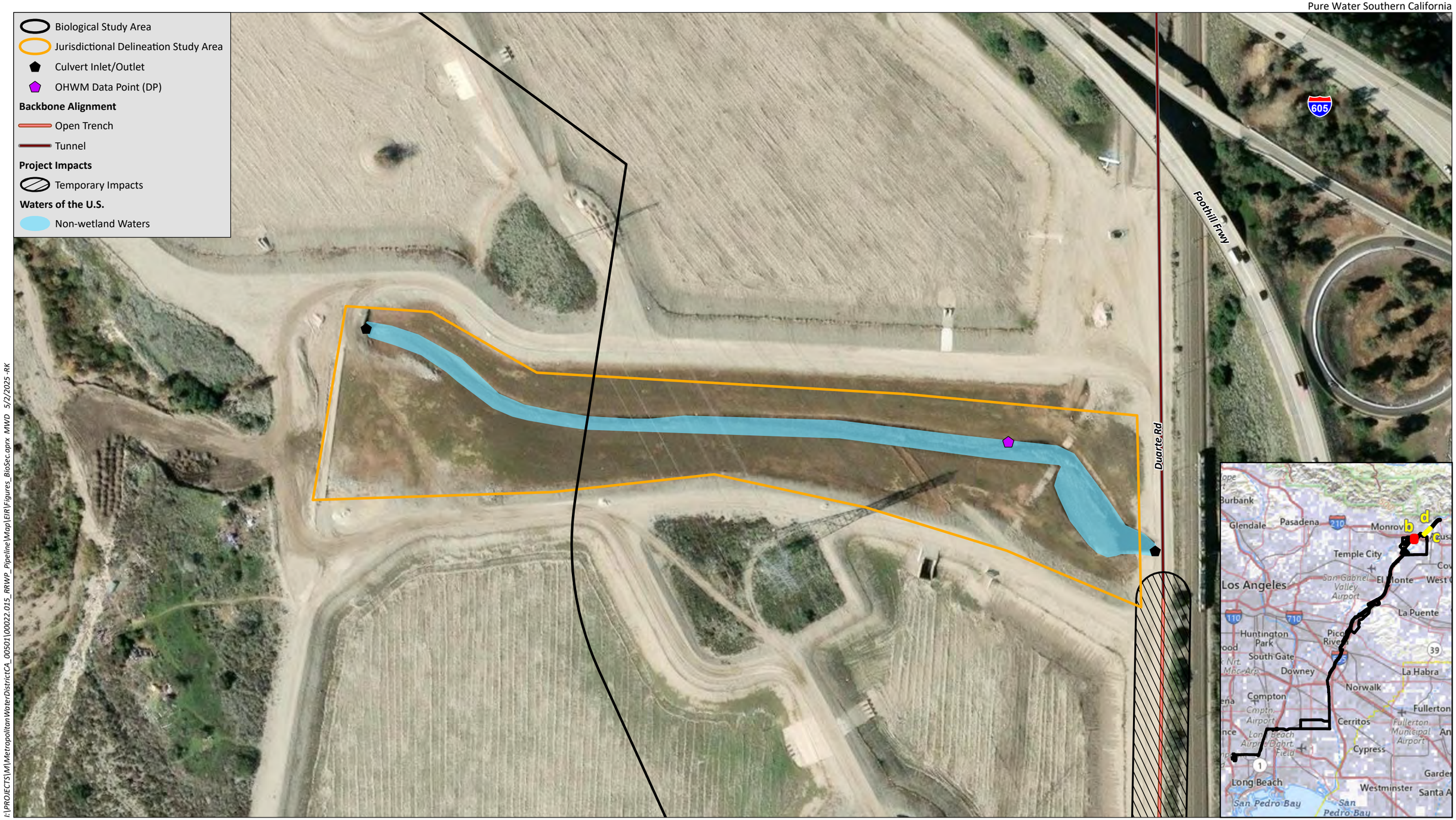
0 3 Miles

Source: Aerial (Esri 2020)

PUREWATER SOUTHERN CALIFORNIA

Waters of the U.S. Impacts Overview

Figure 5.2-10a



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0 150 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Waters of the U.S. Impacts - Area 1 (Santa Fe Dam)

Figure 5.2-10b

- Biological Study Area
- Jurisdictional Delineation Study Area

Backbone Alignment

- Open Trench

Project Impacts

- Permanent Impacts
- Temporary Impacts

Jurisdictional Features

- Culvert
- Non-jurisdictional Upland Swale

0 150 Feet

N

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Waters of the U.S. Impacts - Area 2a (San Gabriel Canyon Spreading Grounds)

Figure 5.2-10c

- Biological Study Area
- Jurisdictional Delineation Study Area
- Culvert Inlet/Outlet

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Permanent Impacts
- Temporary Impacts

Waters of the U.S.

- Non-wetland Waters

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0 150 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Waters of the U.S. Impacts - Area 2b (San Gabriel Canyon Spreading Grounds)

Figure 5.2-10d

Biological Study Area
Jurisdictional Delineation Study Area
Backbone Alignment
Open Trench
Tunnel

Area 2c (San Gabriel Canyon Spreading Grounds)
Area 2b (San Gabriel Canyon Spreading Grounds)
Area 2a (San Gabriel Canyon Spreading Grounds)
San Gabriel Canyon Spreading Grounds
Santa Fe Spreading Grounds
Santa Fe Dam Spillway
Area 1 (Santa Fe Dam)
San Gabriel Coastal Spreading Grounds
Dominguez Gap Wetlands

San Gabriel Wilderness Area
Los Angeles
La Cañada Flintridge
Burbank
Altadena
Sierra Madre
Glendale
Pasadena
Arcadia
Azusa
Glendora
San Gabriel
Alhambra
Rosemead
El Monte
West Covina
Covina
Monterey Park
South El Monte
East Los Angeles
Montebello
La Puente
Huntington Park
Florence-Graham
South Gate
Whittier
Santa Fe Springs
Downey
Lynwood
La Habra
South Whittier
Norwalk
Bellflower
Cerritos
Buena Park
Fullerton
Lakewood
Hawaiian Gardens
Anaheim
Carson
Lomita
Signal Hill
Long Beach
Naval Weapons Station Seal Beach
Westminster
Garden Grove
Orange
Santa Ana
Sunset Beach
Fountain Valley
Huntington Beach
Costa Mesa
Los Angeles River
San Gabriel River
San Jose Creek

0 3 Miles

Source: Aerial (Esri 2020)

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PURE WATER SOUTHERN CALIFORNIA

Waters of the State Impacts Overview

Figure 5.2-11a

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0 150 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Waters of the State Impacts - Area 1 (Santa Fe Dam)

Figure 5.2-11b

- Biological Study Area
- Jurisdictional Delineation Study Area

Backbone Alignment

- Open Trench

Project Impacts

- Permanent Impacts
- Temporary Impacts

Jurisdictional Features

- Culvert
- Non-jurisdictional Upland Swale

0 150 Feet

Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

Waters of the State Impacts - Area 2a (San Gabriel Canyon Spreading Grounds)

Figure 5.2-11c

- Biological Study Area
- Jurisdictional Delineation Study Area
- Culvert Inlet/Outlet

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Permanent Impacts
- Temporary Impacts

Waters of the State

- Non-wetland Waters

Source: Aerial (Esri 2021)

0 150 Feet

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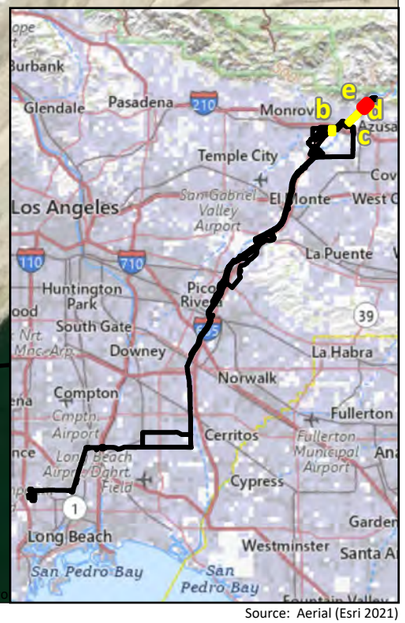
PURE WATER SOUTHERN CALIFORNIA

Waters of the State Impacts - Area 2b (San Gabriel Canyon Spreading Grounds)

Figure 5.2-11d

Biological Study Area
Jurisdictional Delineation Study Area
Sample Point
Backbone Alignment
Open Trench
Project Impacts
Temporary Impacts
Waters of the State
Non-wetland Waters (Isolated)

SP 1
SP 2



Area 2c (San Gabriel Canyon Spreading Grounds)

0 150 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

Waters of the State Impacts - Area 2c (San Gabriel Canyon Spreading Grounds)

Figure 5.2-11e

Biological Study Area
Jurisdictional Delineation Study Area
Backbone Alignment
Open Trench
Tunnel

Area 2b (San Gabriel Canyon Spreading Grounds)
Area 2a (San Gabriel Canyon Spreading Grounds)
San Gabriel Canyon Spreading Grounds
Santa Fe Spreading Grounds
Area 1 (Santa Fe Dam)
Santa Fe Dam Spillway
San Gabriel Coastal Spreading Grounds
Dominguez Gap Wetlands
San Gabriel Wilderness Area
Los Angeles
La Cañada Flintridge
Burbank
Glendale
Pasadena
Altadena
Sierra Madre
Azusa
Glendora
San Gabriel
Alhambra
Rosemead
El Monte
West Covina
Covina
Monterey Park
South El Monte
East Los Angeles
Montebello
La Puente
Whittier
Huntington Park
Florence-Graham
South Gate
Downey
Lynwood
Norwalk
La Habra
South Whittier
Bellflowe
Cerritos
Buena Park
Fullerton
Lakewood
Carson
Hawaiian Gardens
Anaheim
Lomita
Signal Hill
Long Beach
Naval Weapons Station Seal Beach
Westminster
Garden Grove
Orange
Santa Ana
Sunset Beach
Fountain Valley
Huntington Beach
Costa Mesa
Los Angeles River
San Gabriel River
San Jose Creek

0 3 Miles

Source: Aerial (Esri 2020)

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PURE WATER SOUTHERN CALIFORNIA

CDFW Jurisdiction Impacts Overview

Figure 5.2-12a

Pure Water Southern California

- Biological Study Area
- Jurisdictional Delineation Study Area
- Culvert Inlet/Outlet
- OHWM Data Point (DP)

Backbone Alignment

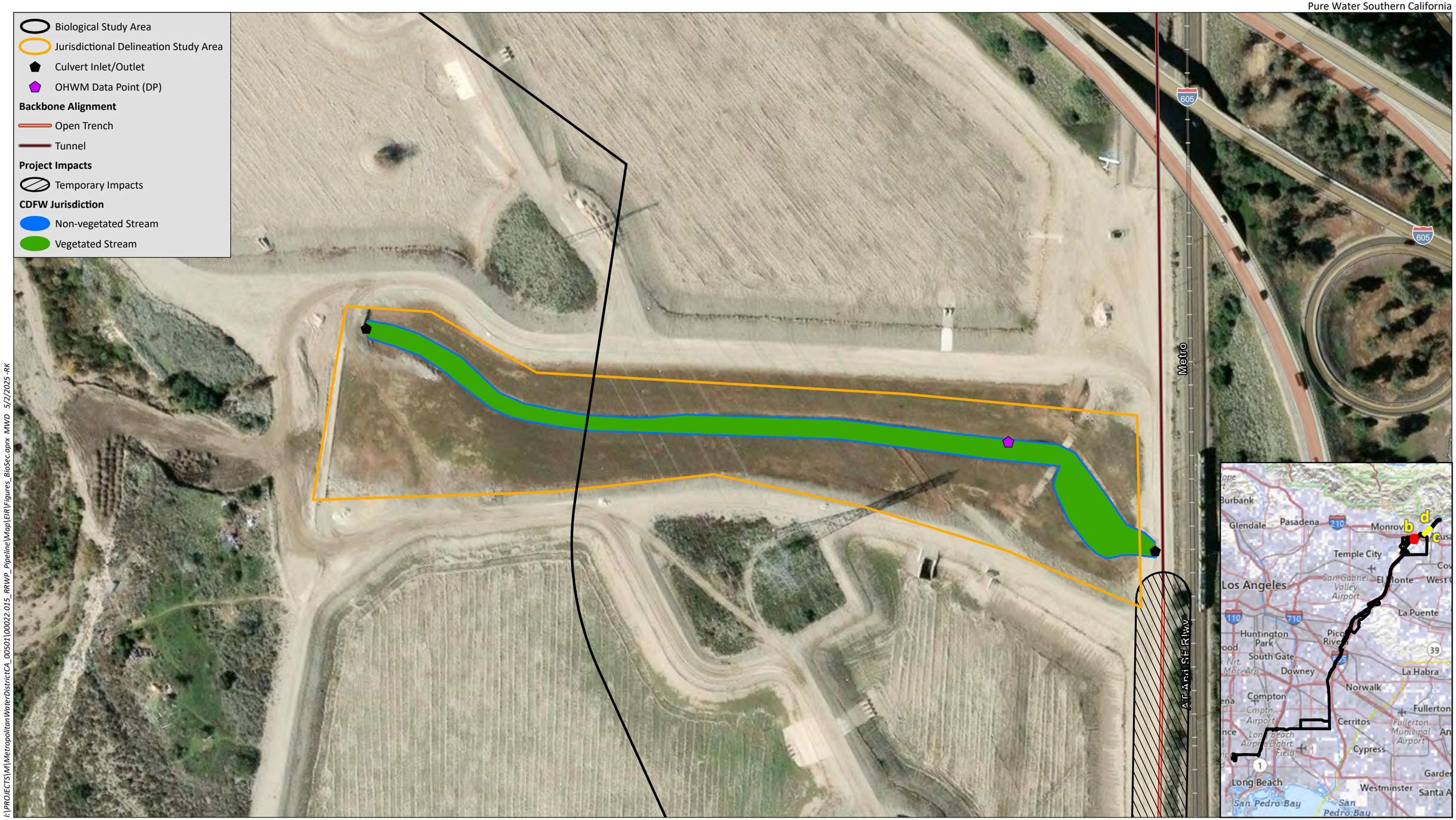
- Open Trench
- Tunnel

Project Impacts

- Temporary Impacts

CDFW Jurisdiction

- Non-vegetated Stream
- Vegetated Stream



0 150 Feet

Source: Aerial (Esri 2021)

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PUREWATER SOUTHERN CALIFORNIA

CDFW Jurisdiction Impacts - Area 1 (Santa Fe Dam)

Figure 5.2-12b

Biological Study Area
Jurisdictional Delineation Study Area
Backbone Alignment
Open Trench
Project Impacts
Permanent Impacts
Temporary Impacts
Jurisdictional Features
Culvert
Non-jurisdictional Upland Swale

San Gabriel River
San Gabriel River
San Gabriel River
San Gabriel River
San Gabriel River
Lario San Gabriel River Trl
Lario San Gabriel River Trl
Southern Pacific RR
Southern Pacific RR

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0 150 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

CDFW Jurisdiction Impacts - Area 2a (San Gabriel Canyon Spreading Grounds)

Figure 5.2-12c

- Biological Study Area
- Jurisdictional Delineation Study Area
- Culvert Inlet/Outlet

Backbone Alignment

- Open Trench
- Tunnel

Project Impacts

- Permanent Impacts
- Temporary Impacts

CDFW Jurisdiction

- Unvegetated Stream

0 150 Feet

Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

CDFW Jurisdiction Impacts - Area 2b (San Gabriel Canyon Spreading Grounds)

Figure 5.2-12d

The majority of the BSA occurs within developed roadways, public ROWs, existing flood control and utility easements (e.g., LACPW and SCE), active urban nurseries, and developed neighborhood parks. These areas are situated within densely urbanized areas that are largely devoid of resources that would attract wildlife or facilitate movement or contain limited and fragmented habitat that does not functionally contribute to local or regional wildlife linkages and corridors. The San Gabriel River runs through the BSA and generally parallels the backbone alignment through the northern two-thirds of the BSA until the backbone alignment reaches South Street and turns west, away from the river, in the City of Lakewood. The San Gabriel River has been heavily modified for flood control conveyance purposes through urban areas of Los Angeles County, from the foothills of the San Gabriel Mountains to the Pacific Ocean, which has either diminished or significantly constrained its ability to serve as a wildlife linkage and movement corridor. Additionally, the San Gabriel River Trail is located at the top of the river embankments throughout its entire reach through the BSA and is heavily used by pedestrians and cyclists. The southern reach of the San Gabriel River downstream of Wilderness Park in the City of Downey is completely concrete-lined and devoid of vegetation. As such, this reach would not function as a viable linkage or movement corridor. The majority of the middle reach between the Santa Fe Dam and Wilderness Park is characterized by herbaceous vegetation that is actively maintained to prevent the establishment of shrubs and trees and transitions between inundated sections and open dry areas. This reach likely facilitates the movement and dispersal of birds and local wildlife that are adapted to heavily urbanized areas, such as raccoon (*Procyon lotor*) and Virginia opossum (*Didelphis virginiana*).

Two portions of the San Gabriel River occur within SEA, as designated by the County of Los Angeles, which contain important biological resources and provide habitat linkages that connect biological resource areas in Los Angeles County with resource areas in adjacent local jurisdictions (**Figure 5.2-2**). These areas are located near Whittier Narrows and Santa Fe Dam and are located within the Puente Hills SEA and San Gabriel Canyon SEA, respectively, as described below.

An approximately 3-mile section of San Gabriel River between the California Country Club and Whittier Junction is located within the Puente Hills SEA and contains mature riparian vegetation. Puente Hills SEA represents a wildlife linkage connecting Puente Hills with the Chino Hills to the east. The I-605 transportation corridor, and other dense urban development, separates native habitats within the Whittier Narrows Recreation/Natural Area and San Gabriel River from open space areas located east of I-605 in Puente Hills that have direct connectivity to Chino Hills. As such, wildlife movement within this section of the San Gabriel River and between the Whittier Narrows Recreation/Natural Area and Puente Hills is highly constrained. Common species adapted to urbanized settings would be expected to utilize the habitat within this area for cover and foraging opportunities in addition to live-in habitat. However, larger mammals such as bobcat (*Lynx rufus*) and mule deer (*Odocoileus hemionus*) would generally be absent and discouraged from east-to-west travel as a result of the surrounding development and lack of functional connectivity to nearby open space areas. Birds would be expected to move unobstructed between key habitat blocks of coastal sage scrub and riparian habitat that provide important breeding, foraging, and dispersal functions.

The portion of the San Gabriel River between the foothills of the San Gabriel Mountains and the Santa Fe Dam is located within the San Gabriel Canyon SEA and contains native upland and riparian habitats. The San Gabriel Canyon SEA provides linkages to the San Gabriel Mountains and other foothill areas. Native habitats within the BSA have direct connectivity to U.S. National Forest lands to the north located within the San Gabriel Mountains. As such, local wildlife would likely use the riparian corridor to move south to north and utilize the San Gabriel Mountains and adjoining foothill areas for dispersal and movement to other habitat areas further north, east, and west. However, movement patterns to the

south of the Santa Fe Dam Recreation Area would remain highly constrained. Existing barriers to movement, such as the Santa Fe Dam, transportation corridors (i.e., I-210 and I-605), multiple roadway crossings, and surrounding urban development, would impede wildlife movement to the south. Common species adapted to urbanized settings and some small mammal species, such as coyote (*Canis latrans*) and bobcat, would be expected to utilize the habitat within this area for cover and foraging opportunities in addition to live-in habitat. However, larger mammals, such as mountain lion (*Puma concolor*), gray fox (*Urocyon cinereoargenteus*), and mule deer, would generally be absent and discouraged from moving north to south because of the surrounding development, transportation corridors, and the lack of functional connectivity to open space areas further south. Birds would be expected to move unobstructed between key habitat blocks of coastal sage scrub and riparian habitat that provide important breeding, foraging, and dispersal functions.

5.2.2 Regulatory Framework

5.2.2.1 Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) (16 U.S. Code Section 1531 *et seq.*) and its implementing regulations (50 CFR Section 402 *et seq*.) establish protections for fish, wildlife, and plants that are listed as threatened or endangered; provide for adding species to and removing them from the list of threatened and endangered species and designating their critical habitat; and provide for preparing and implementing plans for their recovery. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. Two federal wildlife agencies implement the FESA: the USFWS for terrestrial species and freshwater fish species, and NMFS for marine species and anadromous fish species. Once an area is designated as critical habitat pursuant to the FESA, federal agencies must consult with the USFWS and/or NMFS to ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of the critical habitat.

Sections 7 and 9 of FESA protect species listed as endangered or threatened by USFWS or NMFS. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered "take" under the FESA. Section 9(a) of the FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns. It has been established through case law that habitat modification alone may constitute take, but only when the impact is likely to result in the actual killing or injury of a fish or wildlife species.

Sections 7 and 4(d) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 requires interagency consultation for any federal action that "may affect" listed species or its critical habitat. Federal actions, which include issuance of a permit by a federal agency such as the USACE or provision of federal funding, which are "likely to adversely affect" listed species require the project proponent to prepare a Biological Assessment identifying project impacts and measures to avoid or minimize impacts to listed species. Formal Section 7 consultation is complete upon issuance of a Biological Opinion by USFWS and/or NMFS. A Biological Opinion is a regulatory document that includes a determination whether the project will cause "jeopardy" to the continued existence of listed species or "adverse modification" or destruction of critical habitat; terms and conditions to

protect listed species; and, if applicable, an "incidental take statement" authorizing take of listed species incidental to otherwise lawful activities as specified.

When a project lacks a federal nexus and, therefore, cannot use Section 7 to obtain authorization to incidentally take listed species, a project proponent may obtain such authorization through Section 10 of the FESA. To obtain an "incidental take permit" through Section 10, a project proponent is required to prepare a Habitat Conservation Plan specifying actions that will be taken to avoid or minimize impacts to listed species as well as identifying compensatory mitigation to offset the impacts of authorized take to the "maximum extent practicable."

Pure Water is anticipated to receive federal funding and federal permits/authorizations. A Section 7 consultation would be required if impacts to a federally listed species or adverse modification of critical habitat would potentially occur.

Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act of 2004 (Federal Register Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to August 31). In addition, the USFWS commonly places restrictions on the disturbances allowed near active raptor nests.

Clean Water Act (Sections 404 and 401) and Rivers and Harbors Act (Section 10)

Federal wetland regulation (non-marine issues) is guided by Section 10 of the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. (including wetlands) is overseen by the USACE under Section 404 of the CWA. Projects could be permitted on an individual basis or be covered under one of several approved Nationwide Permits.

Section 401 of the CWA requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. must first obtain a Water Quality Certification, or a waiver thereof, from the state in which the discharge originates. In California, the Regional Board issues Water Quality Certifications or waivers.

5.2.2.2 State

California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. CEQA Guidelines Section 15380 provides the definition of endangered, threatened, and rare species for the purposes of CEQA review. A species is considered endangered when its survival and reproduction in the wild are in immediate jeopardy from one or more causes. A species is considered rare when either: (1) it exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (2) it is likely to become

endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened." A species may meet these definitions regardless of whether it is formally listed. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Endangered Species Act

The California Endangered Species Act (CESA) (FGC Section 2050 *et seq*.) establishes protections for fish, wildlife, and plants that are listed as threatened or endangered, or are candidates for such listing, and provides for adding species to and removing them from the list of threatened and endangered species. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. The CDFW implements CESA.

Section 2080 of the FGC prohibits the unauthorized "take" of fish, wildlife, and plant species listed as candidate, threatened, or endangered under the CESA. "Take" is defined in the FGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Unlike FESA, habitat modification alone does not constitute take under CESA.

Under Section 2081(b) of the FGC, the CDFW may issue an incidental take permit for CESA-protected species authorizing the incidental take of the species; however, the impacts must be minimized and "fully mitigated."

For species that are listed under both the FESA and CESA, the CDFW may issue a Consistency Determination under Section 2080.1 of the FGC authorizing take of the species if the project proponent has obtained either a Biological Opinion issued by the USFWS or NMFS (under Section 7 of the FESA) or federal incidental take permit (under Section 10 of the FESA). For a Consistency Determination to be issued, the Biological Opinion or federal incidental take permit must meet CESA standards, including the requirement to fully mitigate for impacts to the species.

California Fish and Game Code

Lake and Streambed Alteration Agreement

The FGC provides specific protection and listing for several types of biological resources. Section 1600 of the FGC requires that an entity notify the CDFW for any activity that would substantially divert or obstruct the flow, or substantially change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. If the CDFW determines that the activity would substantially adversely affect fish and wildlife resources, it will issue a Lake and Streambed Alteration Agreement with reasonable measures to protect these resources. Typical activities that require a Lake and Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation removal within a streambed, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement.

Nesting Birds

Section 3503 of the FGC prohibits the unlawful take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by FGC Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of

any such bird unless authorized by the CDFW. Section 3511 of the FGC prohibits take or possession of any fully protected bird. Section 3513 of the FGC states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or paused during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

Non-Game Mammals

Section 4150 of the FGC provides that non-game mammals (including bats) may not be taken or possessed except as provided in this code or in accordance with regulations adopted by CDFW.

Section 401 Water Quality Certification/Porter-Cologne Water Quality Control Act

The Regional Board, through the SWRCB, asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the state pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act as described in the CWC. Waste, according to the CWC, includes sewage and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers prior to, and for purposes of, disposal.

As discussed in Section 5.2.2.1, whenever a project requires a federal CWA Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification from the Regional Board. State waters that are not federal waters may be regulated under the Porter-Cologne Water Quality Control Act, which requires that a Report of Waste Discharge be filed with the Regional Board for projects that result in the discharge of waste into waters of the state. The Regional Board will issue Waste Discharge Requirements (WDRs) or a waiver.

5.2.2.3 Local Regulations

County of Los Angeles Significant Ecological Area Program

As noted in Section 5.2.1.2, SEA are officially designated areas within the County with irreplaceable biological resources. The objective of the County's SEA Program is to conserve genetic and physical diversity within the County by designating biological resource areas that are capable of sustaining themselves into the future. SEA are designed to be large enough to support sustainable populations of their component species and include natural as well as lightly disturbed habitats, and often provide important wildlife linkages and corridors that promote species movement and genetic flow.

The County's SEA Ordinance establishes the permitting, design standards, and review process for development within SEA. The SEA Ordinance, together with the goals and policies of the County's 2035 General Plan, help guide development within SEA. The County's Department of Regional Planning oversees the SEA Program, which applies only within unincorporated areas of the county. Much of the land in SEA is privately held, used for public recreation, or abuts developed areas. Per the Conservation and Natural Resources Element of the General Plan, the SEA Program must therefore balance the overall objective of resource preservation against other critical public needs. The General Plan goals and policies are intended to ensure that privately held lands within the SEA retain the right of reasonable use, while avoiding activities and developments that are incompatible with the long-term survival of the SEA.

The SEA Ordinance Implementation Guide (County 2020) states that development within SEA must demonstrate compliance with the following findings:

a) Be highly compatible with the SEA Resources, including the preservation of natural open space areas and providing for the long-term maintenance of ecosystem functions;

b) Avoid or minimize impacts to the SEA Resources and wildlife movement through one or more of the following: avoiding habitat fragmentation, minimizing edge effects, or siting development in the least sensitive location;

c) Buffer important habitat areas from development by retaining sufficient natural vegetation cover and/or natural open spaces and integrating sensitive design features;

d) Maintain the ecological and hydrological functions of water bodies, watercourses, and their tributaries;

e) Ensure that roads, access roads, driveways, and utilities do not conflict with Priority Biological Resources, habitat areas or migratory paths; and

f) Promote the resiliency of the SEA to the greatest extent possible. For purposes of this finding, SEA resiliency cannot be preserved when the proposed development may cause any of the following:

1. Significant unmitigated loss of contiguity or connectivity of the SEA;

2. Significant unmitigated impact to a Priority Biological Resource;

3. Removal of habitat that is the only known location of a new or rediscovered species; or

4. Other factors as identified by SEA Technical Advisory Committee.

The County's SEA Ordinance divides SEA resources into five categories, with each category afforded a certain level of protection consistent with its relative abundance in the County and sensitivity to disturbance. SEA resources that fall into Categories 1 through 3 are considered Priority Biological Resources and include the following resources as summarized below:

- SEA Resource Category 1: endangered, threatened, or rare plant and animal species; plant species with a CRPR of 1a, 1b, 2a, or 2b; critically imperiled natural communities with a state sensitivity ranking of S1; and water resources;

- SEA Resource Category 2: animal species designated as Species of Special Concern by the CDFW and imperiled natural communities with a state sensitivity ranking of S2; and

- SEA Resource Category 3: native resources that are rare or significant within the County or specific SEA, vulnerable natural communities with a state sensitivity ranking of S3, and oak woodland.

Certain uses of the SEA are compatible with the long-term sustainability of biological resources, such as regulated scientific study; passive recreation, including wildlife observation and photography; and

limited picnicking, riding, hiking, and overnight camping. Many other uses may also be compatible with the SEA Program or may partially or fully mitigate against potential impacts through careful site design and stewardship. For example, essential public and semi-public uses that are necessary for health, safety, and welfare, and that cannot be relocated to alternative sites, may be determined compatible uses within SEA as they are originally proposed, or through the addition of conditions that are intended to protect against site-specific and cumulative impacts to biological resources in the SEA.

Twenty-one SEA have been designated within the County, two of which overlap portions of the BSA: San Gabriel Canyon SEA and Puente Hills SEA (**Figure 5.2-2**). The northern portion of the BSA from the Santa Fe Dam area north along the San Gabriel River and into the foothills of the San Gabriel Mountains is within the San Gabriel Canyon SEA; however, this portion of the SEA is within incorporated cities, and, therefore, the County's SEA Ordinance does not apply in this area. The BSA overlaps with four small portions of the Puente Hills SEA, the largest of which is where it crosses San Jose Creek at the San Gabriel River. The three other areas are: (1) at the south end of the Rose Hills Memorial Park cemetery east of Workman Mill Road; (2) immediately east of the intersection of Fairway Drive and San Gabriel Parkway; and (3) just west of the intersection of Rose Hills Road and I-605. The last two areas are within incorporated cities where the County's SEA Ordinance does not apply.

Tree Protection/Preservation Ordinances or Policies

The County and several cities within the Joint Treatment Site and backbone alignment have tree protection/preservation ordinances or policies, each with their own parameters and procedures. These are summarized below in **Table 5.2-8**. Jurisdictions with tree ordinances or policies that occur within the BSA include the County of Los Angeles and cities of Carson, Azusa, Baldwin Park, Bellflower, Cerritos, Downey, Duarte, Industry, Irwindale, Lakewood, Long Beach, Norwalk, Pico Rivera, Santa Fe Springs, and Whittier.

Table 5.2-8
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
County of Los Angeles		
Oak Tree Permit Ordinance (Chapter 22.74 of the Los Angeles County Code)		
Any tree of the oak genus which: 1. Is of size indicated in the column to the right 2. Has been provided as a replacement tree, pursuant to Section 22.174.070 (Conditions of Approval), on any lot within the unincorporated area of the County, unless an Oak Tree Permit is first obtained.	25 inches or more in circumference (eight inches in diameter) as measured four and one-half feet above mean natural grade; in the case of an oak with more than one trunk, whose combined circumference of any two trunks is at least 38 inches (12 inches in diameter) as measured four and one-half feet above mean natural grade	The Oak Tree Permit is established: (a) to recognize oak trees as significant historical, aesthetic, and ecological resources, and as one of the most picturesque trees in Los Angeles County, lending beauty and charm to the natural and manmade landscape, enhancing the value of property, and the character of the communities in which they exist; and (b) to create favorable conditions for the preservation and propagation of this unique, threatened plant heritage, particularly those trees which may be classified as heritage oak trees, for the benefit of current and future residents of the County. No person shall cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any protected tree without first obtaining a permit.
City of Azusa		
Tree Preservation Ordinance (Chapter 62, Article VI of the City of Azusa Municipal Code)		
All existing living trees.	Diameter at breast height (DBH) of six inches or more	The City of Azusa tree preservation ordinance is adopted to ensure and enhance the public health, safety, and welfare through proper care, maintenance, and preservation of trees in Azusa. According to the ordinance, it is unlawful for any person or entity to destroy, deface or injure any public tree through willful intent or negligence. Trees that have a six-inch or greater DBH shall not be removed or relocated unless authorized by the director of public works and replaced as determined by the director of public works. Trees on public as well as private property shall be maintained to the satisfaction of the city.

Table 5.2-8 (cont.)
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
City of Baldwin Park		
Tree Preservation and Protection Ordinance (Title XV, Chapter 153.165 of the City of Baldwin Park Municipal Code)		
Every Public Tree, every Required Tree and every Mature Tree located on private property.	N/A	The City of Baldwin Park Tree Preservation and Protection Ordinance's goal is to promote the benefits of a healthy urban forest in the city. The ordinance applies to Public Trees, Mature Trees, the Tree Canopy, and Healthy trees. The City's Planning Commission is the designated tree advisory board and makes decisions based on tree preservation. The Community Development Department is designated as the city's Tree Department. The Tree Officer, who is designated by Chief Executive Officer, shall implement the functions of the Tree Department. The Tree officer is in charge of the issuance of permits. The Tree department is responsible for administering the Tree master plan. Removal of Public Trees, Required Trees, and Mature Trees require permits and approval by the Tree Department.
City of Bellflower		
No Ordinance protecting trees specifically		
The Public Works Department is responsible for preserving and protecting the community's urban forest and to promote the health and safety of City trees, from the time they are planted through maturity (City of Bellflower 2022).		
City of Carson		
City Tree Preservation and Protection Ordinance (Article III, Chapter 9 of the City of Carson Municipal Code)		
City parkway trees. Tree is defined as any woody plant, including a palm, which has the potential of attaining a minimum height of 15 feet and has its canopy of foliage borne normally on a single trunk.	Trees with the potential of attaining a minimum height of 15 feet and has its canopy of foliage	The purpose of the City of Carson Tree Preservation and Protection Ordinance is to preserve and protect city parkway trees that are of aesthetic importance and to provide for the replacement of trees in order to maintain the community's natural environment. In accordance with the ordinance, removal of a tree within the city parkway easement requires a permit.

Table 5.2-8 (cont.)
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
City of Cerritos		
Trees and Landscape Ordinance (Chapter 9.75 of the City of Cerritos Municipal Code)		
"City tree" means a tree which is located within any city park, city easement, parkway or on any other city-owned property.	N/A	The City of Cerritos Tree Ordinance seeks to protect the "urban forest" character and park-like community. It prohibits "topping" of city trees and removal of street trees unless they are diseased, dead, or dying, or pose a threat to public health or safety. The ordinance also allows the City of Cerritos Property Preservation Commission to designate heritage trees with historical significance. No city tree shall be removed unless authorized pursuant to the city tree removal policy. If the tree removal is authorized, the applicant is prohibited from removing the city tree. The city shall be responsible for removal. Special consideration shall be afforded to city trees determined by the property preservation commission to be heritage trees. Such trees shall be removed only when public interest served by removal outweighs the interest in preservation and heritage status.
City of Downey		
Street Tree Preservation and Protection Ordinance (Article VII, Chapter 6 of the City of Downey Municipal Code)		
"City tree" means a tree which is located within any city park, city easement, parkway or on any other city-owned property.	N/A	The City of Downey's tree protection ordinance states that no person (other than the City or persons acting under the City's authority) shall cause, permit, or allow the removal of any street tree without having first obtained a valid permit therefore from the Public Works Department.

Table 5.2-8 (cont.)
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
City of Duarte		
Tree Protection and Preservation Ordinance (Chapter 13.12 of the Duarte Municipal Code)		
Native Trees: all endemic California oak species, (including but not limited to: *Quercus agrifolia*, *chrysolepis*, *engelmannii*, *kelloggii*, *lobata*, and *wislizeni*); California bay laurel (*Umbellularia californica*); California black walnut (*Juglans californica*); California sycamore (*Platanus racemosa*); and Toyon (*Heteromeles arbutifolia*). Specimen trees: generally larger and/or older trees (except native trees) that make a significant aesthetic or environmental contribution to their immediate surroundings.	Native trees: twelve inches in diameter or greater, as measured from DBH Specimen trees: twenty-four inches in diameter or greater, as measured from DBH	The purpose is to protect certain trees in order to preserve cultural heritage, maintain and enhance the scenic beauty of the city, improve air quality, abate soil and slope erosion, preserve and enhance property values, and thereby promote public health, safety and welfare by: (a) Identifying native and specimen trees and establishing procedures to encourage their conservation; (b) Including consideration of existing trees and their protection in the review and implementation of development proposals; (c) Requiring permits for the removal and alteration of native and specimen trees except in emergencies; and (d) Requiring replacement plantings when native and specimen trees are removed. No person shall remove or cause the removal of or alter any native or specimen tree unless a tree permit is first obtained from the community development department. Prior to the granting of a tree permit, an application for alteration and/or removal shall be submitted to the community development department. Tree permit applications which approve tree removal(s) shall provide replacement tree(s) as specified in Section 13.12.080 of the Duarte Municipal Code.
City of Industry		
No Ordinance protecting trees specifically		
From the Construction Permit Ordinance (Section 12.08.470 of the City of Industry Municipal Code): If so required by the commissioner the permittee shall make proper arrangements for, and bear the cost of, relocating any structure, public utility, tree, or shrub, where such relocation is made necessary by the proposed work for which a permit is issued.		
City of Irwindale		
No Ordinance protecting trees specifically		
From the Street Construction Ordinance (Section 12.04.110 of the City of Irwindale Municipal Code): If so required by the city engineer, the permittee shall make proper arrangements for, and bear the cost of, relocating any structure, public utility, tree, or shrub, where such relocation is made necessary by the proposed work for which a permit is issued.		

Table 5.2-8 (cont.)
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
City of Lakewood		
Tree Preservation Ordinance (Article III, 18A.70.300 of the City of Lakewood Municipal Code)		
A significant tree of the specified sizes.	When measured at four and one-half (4.5) feet above ground, has a minimum diameter of nine (9) inches for evergreen trees and deciduous trees; When measured at four and one-half (4.5) feet above ground, has a minimum diameter of six (6) inches for Garry Oaks (also known as Oregon White Oaks); and Regardless of the tree diameter, is determined to be significant by the Director due to the uniqueness of the species or provision of important wildlife habitat.	The City of Lakewood promotes tree preservation by protecting the treed environment and by regulating the removal of significant trees and providing incentives to preserve trees that, because of their size, species, or location, provide special benefits. Industrially zoned properties are exempt from the tree protection ordinance. Tree removal by a public agency or a franchised utility within a public right-of-way or upon an easement, for the purpose of installing and maintaining water, storm, sewer, power, gas or communication lines, or motorized or nonmotorized streets or paths is exempt from this chapter. Notification to the City by the public agency or franchised utility is required prior to tree maintenance or removal within City rights-of-way. The City of Lakewood also has a City tree fund.
City of Long Beach		
Trees and Shrubs Ordinance (Chapter 14.28 of the City of Long Beach Municipal Code)		
Street trees located in the public rights-of-way.	N/A	The City of Long Beach ordinance related to trees and shrubs states that no person may plant, cut, trim, prune, remove, or in any way interfere with the natural growth of any tree planted along City streets or on other City property without having first obtained a permit from the Director of Public Works to do such work. The Director may require any or all of the work approved by him to be performed under the supervision of the Public Works Department.

Table 5.2-8 (cont.)
TREE PROTECTION/PRESERVATION ORDINANCES AND POLICIES

Species Protected	Size Protected	Removal Requirements/Procedures
City of Norwalk		
Trees and Shrubs Ordinance (Chapter 12.32 of the City of Norwalk Municipal Code)		
Street tree means and includes any tree, by whomever owned or planted, in a street or public place.	N/A	The City of Norwalk ordinance related to trees and shrub states that no person shall cut, trim, prune, plant, spray, remove, injure or interfere with any street tree or shrub without prior permission of the Director of Public Services. The Director may grant such permission in his or her discretion, and where necessary, subject to the condition that a removed tree or shrub will be replaced by an approved tree or shrub in conformity with the master plan, and to such other conditions as he or she may deem in the public interest.
City of Pico Rivera		
Trees Ordinance (Chapter 12.40 of the City of Pico Rivera Municipal Code)		
Trees means and includes all varieties of trees, shrubs, and other ornamental or woody vegetation.	N/A	The City of Pico Rivera ordinance related to trees states that no person, other than a city officer or contractual agent of the city, shall plant, cut down, pull up, burn, destroy, remove, trim, skin, deface or remove the outer trunk surface or bark of any roadside tree, or trim or prune such roadside tree so as to deface, injure, destroy or endanger the life or uniform growth of such roadside tree, without a permit therefor issued by the director of public works, or his or her authorized agent.
City of Santa Fe Springs		
Tree Ordinance (Section 96.130 of the City of Santa Fe Springs Municipal Code)		
Street Trees.	N/A	The City of Santa Fe Springs Tree Ordinance states that no person shall cut, trim, prune, plant, remove, injure or interfere with any tree, shrub or plant upon any street, alley or public right-of-way within the city without a permit therefor from the Director. The Director is hereby authorized to grant such permit in his discretion and, where necessary, subject to the condition that the removed tree be replaced by an official tree as designated by the master street tree plan.
City of Whittier		
Tree Ordinance (Chapter 12.40 of the Whittier Municipal Code)		
Any tree, shrub, or plant upon any street, park, alley or public place of the city.	N/A	The City of Whitter Tree Ordinance states that no person shall cut, trim, prune, plant, remove, injure or interfere with any tree, shrub, or plant upon any street, park, alley, or public place of the city without a permit therefor from the director.

5.2.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to biological resources. Pure Water would have a significant impact if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

2. 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 Wildlife or U.S. Fish and Wildlife Service;

3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

4. 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;

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.2.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

GM-EC-1 **Environmental Awareness Training.** Prior to construction, the Contractor shall attend an Environmental Awareness Training with Metropolitan's construction management team and designated environmental monitors (i.e., qualified biologist, archaeologist, Native American monitor, paleontologist, hazardous materials specialist, as applicable). An Environmental Awareness Training program shall inform all employees of the sensitive resources known or with potential to occur in the local area; the sensitivity of the area in which they will be working; and environmental measures and requirements to comply with project approvals and environmental permits and regulations.

AQ-EC-2 **Fugitive Dust Control.** The contractor shall comply with South Coast Air Quality Management District (SCAQMD) Rule 403 (Fugitive Dust), including implementing the Best Available Control Measures (BACM) listed in Table 1 of Rule 403 for all construction activities, the BACM listed in Table 2 of Rule 403 for large operations (50 or more acres

of disturbed surface area or earth moving operations of 5,000 cubic yards/day for more than 3 days), and the Contingency Control Measures in Table 3 of Rule 403 when wind speeds, including instantaneous gusts, exceed 25 miles per hour.

BIO-EC-1 **Temporary Construction Fencing.** Prior to construction, to prevent inadvertent impacts to environmentally sensitive areas outside of the approved direct impact area, temporary construction fencing shall be installed at all locations where the project facilities and components occur adjacent to riparian habitat, sensitive natural communities, and aquatic resources, including jurisdictional waters or wetlands. Temporary fencing may also include silt fencing, as appropriate and where determined necessary by the Stormwater Pollution Prevention Plan (SWPPP). A qualified biologist shall monitor the installation of the temporary construction fencing wherever it would abut environmentally sensitive areas. Construction activities shall be restricted to areas within the approved impact limits at all times during construction.

BIO-EC-2 **Nesting Bird and Raptor Avoidance.** Trimming, grubbing, and clearing of vegetation shall be avoided during the general avian breeding season (January 15 to July 15 for raptors; February 1 to August 31 for other avian species) to the extent feasible based on schedule considerations and coordination with local agencies. If trimming, grubbing, or clearing of vegetation is proposed during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to disturbance of vegetation to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within the survey area, trimming, grubbing, and clearing of vegetation will be allowed to proceed. If active bird nests are confirmed to be present during the pre-construction survey, a buffer zone shall be established by the qualified biologist. Construction activities shall avoid any active nests and buffer zone until a qualified biologist has verified that the young have fledged or the nest has otherwise become inactive.

BIO-EC-3 **Nighttime Lighting**. Any artificial nighttime lighting shall be shielded and directed away from native habitat and other sensitive biological resource areas.

BIO-EC-4 **Invasive Plant Species**. No invasive plant species listed on the California Invasive Plant Inventory prepared by the California Invasive Plant Council shall be included in project landscaping or revegetation activities.

BIO-EC-5 **Protected Tree Avoidance and Mitigation.** Metropolitan shall conduct a pre-construction survey prior to impacting any trees that may be protected by County of Los Angeles or city ordinances or policies. The survey shall be completed by a biologist, arborist, and/or landscape architect with knowledge of tree identification. For any specimen that is regulated by an applicable local ordinance or policy, the surveyor shall note the species, its diameter at breast height, its location within the direct impact area, and the municipal boundaries within which it is located. Metropolitan shall adhere to the applicable tree trimming and removal requirements and procedures, including any required permits and compensatory tree replacement, as outlined by the County or city.

HYD-EC-1 **Construction General Permit Storm Water Pollution Prevention Plan.** The contractor shall obtain coverage under the Construction General Permit (CGP) and comply with applicable requirements of the CGP, including, but not limited to, preparation and implementation of site-specific SWPPPs in accordance with the requirements of the State Water Resources Control Board, the CGP, and the Construction BMP [Best Management Practices] Online Handbook developed by California Storm Water Quality Association. The SWPPP shall identify Best Management Practices to eliminate/reduce non-storm water discharges to storm systems and other waters of the U.S., prevent construction pollutants from contacting storm water, limit erosion and sediment transport, and manage erosion and pollutants onsite.

5.2.5 Impact Analysis

5.2.5.1 Topic 1: Special-Status Species

Would Pure Water have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Program-Level Analysis

Construction

As discussed in Section 5.2.1, several special-status plant and animal species have been recorded or have high potential to occur within the Pure Water area, and construction activities for Pure Water have the potential to affect these species. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is the possibility for these facilities and components to be sited in or adjacent to areas that contain special-status species. As such, construction activities for Pure Water facilities and components have the potential to directly and/or indirectly affect these species. Once the specific locations of these facilities and components are determined, additional, site-specific surveys would be conducted for special-status plant and animal species in and adjacent to those locations, as applicable. In addition, implementation of applicable ECs during construction of these facilities and components, including educational awareness training (**GM-EC-1**), installation of temporary construction fencing at the approved work limits where they abut sensitive biological resource areas (**BIO-EC-1**), and pre-construction nesting bird surveys prior to the trimming or clearing of vegetation during the bird breeding season (**BIO-EC-2**) would minimize potential impacts to special-status species. However, since it is currently unknown whether special-status species that may be present within those areas can be avoided, direct and/or indirect impacts to affected species are considered **potentially significant**.

Reduction or suspension of imported water flows from service connections PM-26, CENB-48, and USG-3 would not involve construction; therefore, there would be **no impact** to special-status species in these areas as a result of construction.

Operation

Operational activities for Pure Water facilities and components have the potential to affect special-status plant and animal species. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Potential impacts of reduced or suspended imported water flows at service connections PM-26, CENB-48, and USG-3 are addressed in this section. Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited in or adjacent to areas that contain special-status plant and animal species. As such, operational activities for Pure Water facilities and components have the potential to directly and/or indirectly affect these species. Once the specific locations of these facilities and components are determined, additional, site-specific surveys would be conducted for special-status plant and animal species in and adjacent to those locations as applicable. Because it is currently unknown whether special-status plant and animal species within those areas can be avoided, direct and/or indirect impacts to affected species are considered **potentially significant**.

The operation of Pure Water would include discharging purified water into the Santa Fe Spreading Grounds via the Santa Fe Dam Spillway, as well as at the San Gabriel Canyon, Rio Hondo, and San Gabriel Coastal spreading grounds; potential new spreading grounds; and existing and potential new injection wells. These discharges would replace some or all of the discharges of imported water at service connections PM-26, CENB-48, and USG-3. Metropolitan prepared a Technical Memorandum analyzing stream flow conditions at these locations under existing conditions and under the conditions expected during the operation of Pure Water (Metropolitan 2024). These changes and their potential impacts on special-status plant and animal species are discussed below.

PM-26 (Little Dalton Wash)

Little Dalton Wash is an ephemeral stream located in the northeastern corner of the City of Glendora in the foothills of the San Gabriel Mountains. Metropolitan releases imported water from service connection PM-26 via Metropolitan's Glendora Tunnel just above the Little Dalton Spreading Grounds for groundwater recharge (**Figure 5.2-5**). From the spreading grounds, water flows into Little Dalton Wash, which has been channelized immediately downstream of the spreading grounds and conveys water through a concrete-lined storm drain channel. Little Dalton Wash flows southwest and then converges with Big Dalton Wash and continues southwest through a concrete-lined storm drain channel where it connects to Walnut Creek and then discharges into the San Gabriel River to ultimately recharge the Main San Gabriel Basin.

Over the past 25 years, Metropolitan has released an average of about 1,100 AFY of imported water from service connection PM-26 into the Little Dalton Spreading Grounds. In addition, about 1,200 AFY of stormwater runoff is also captured in the spreading grounds. As part of Pure Water operations, water releases from PM-26 would be reduced or discontinued and replaced with releases of Pure Water at the Santa Fe Spreading Grounds. To be conservative, it is projected that all releases of imported water by Metropolitan at PM-26 would be discontinued, which would reduce the amount of water recharged at the Little Dalton Spreading Grounds by about 1,100 AFY, equating to an approximately 50 percent reduction.

The concrete-lined portion of the storm drain channel immediately downstream of the spreading grounds does not support biological resources; therefore, no impacts to special-status species would occur in that area. The earthen portion (e.g., not concrete-lined) of Little Dalton Wash and the Little

Dalton Spreading Grounds that would receive less water under Pure Water operations is an approximate 0.6-mile-long reach. The reach is primarily characterized by uplands and habitat types that have a relatively low degree of water dependence for their survivorship, including non-native grassland and disturbed habitat, with a patch of coast live oak woodland located downstream of the spreading grounds (**Figure 5.2-5**). Suitable wetland, riparian, and other habitats with a relatively high degree of water dependence for their survivorship and that have the potential to support special-status wetland and riparian species, such as LBVI, are not present and no special-status plant or animal species associated with wetland and riparian habitats are known to occur. As such, the discontinued water deliveries are not anticipated to result in adverse impacts on upland vegetation communities or special-status plant or animal species that they may support. Therefore, potential impacts to special-status plant and animal species or their habitats within areas of discontinued flow in the Little Dalton Spreading Grounds and Little Dalton Wash would be **less than significant**.

CENB-48 (San Dimas Wash)

San Dimas Wash is an ephemeral to intermittent stream located at the northeast corner of the City of San Dimas at the foothills of the San Gabriel Mountains within the bottom portion of San Dimas Canyon. San Dimas Wash currently receives stormwater runoff from San Dimas Canyon and imported water from the SWP via Metropolitan's Rialto Feeder through service connection CENB-48 (**Figure 5.2-6**). The downstream portion of the wash below the San Dimas Spreading Grounds receives these water deliveries from the service connection. Releases from CENB-48 enter San Dimas Wash and flow west along the earthen portion of the wash for approximately 0.25 mile and then enter a concrete-lined storm drain channel. The concrete-lined channel continues west and merges with the concrete-lined Big Dalton Wash to ultimately recharge the Central Basin.

Over the past 25 years, an average of about 9,800 AFY has been released by Metropolitan from CENB-48. Under existing conditions, the average flows in San Dimas Wash are highest, due to releases from CENB-48, in December. The stormwater flows in the San Dimas Wash average about 700 AFY with the highest occurring January through May. Under Pure Water, CENB-48 deliveries would be suspended and deliveries of approximately 9,800 AFY would be made directly from the backbone pipeline to the Central Basin recharge areas, resulting in a reduction of approximately 93 percent of flows at San Dimas Wash.

The earthen portion of San Dimas Wash downstream of CENB-48 is characterized by alluvial fan sage scrub, mule fat scrub, arundo-dominated riparian, and coast live oak woodland (**Figure 5.2-6**). Protocol surveys conducted for LBVI within the Discharge Study Area of San Dimas Wash in 2023 were negative, and no special-status plant or animal species associated with habitats within this area are known to occur. Suitable wetland, riparian, and other habitats with a relatively high degree of water dependence for their survivorship and that have the potential to support other special-status wetland and riparian species are not present. Habitats within the earthen portion of San Dimas Wash are adapted to ephemeral and intermittent stream flows, and do not require perennial surface flows to sustain the dominant plant species that make up these communities. Though water releases at CENB-48 would be suspended, except for during wet years, San Dimas Wash would continue to receive runoff flows from San Dimas Canyon. As such, the overall hydrology of the wash would not be significantly altered from suspension of releases from CENB-48. San Dimas Wash would still be an ephemeral to intermittent stream and vegetation within the downstream earthen portion of the wash is expected to remain in its current condition, with no loss or conversion of existing habitat anticipated. Therefore, the reduction of water deliveries in San Dimas Wash would not be expected to significantly alter, degrade, or otherwise

adversely impact existing habitats with potential to support special-status plant and animal species, and no such species are known to occur. Impacts would be **less than significant**.

USG-3 (San Gabriel River between Morris Dam and the Santa Fe Dam)

The segment of the San Gabriel River between Morris Dam and Santa Fe Dam is located downstream of service connection USG-3 within the City of Azusa and unincorporated County lands. This reach of the San Gabriel River receives surface water releases from Morris Dam and SWP deliveries via Metropolitan's Glendora Tunnel at service connection USG-3. Service connection USG-3 was brought into service on February 1, 1972, and provides SWP water for groundwater replenishment within the Upper San Gabriel Valley Municipal Water District's service area in the Main San Gabriel Basin. Water from service connection USG-3 is released just south of Morris Dam where it is discharged into the San Gabriel River. A rubber dam, built in 1995, is located along the San Gabriel River below I-210 and is used to direct flows from the San Gabriel River into the Santa Fe Spreading Grounds. This reach of San Gabriel River is considered the zone of influence for USG-3 water deliveries being analyzed at the program level for potential impacts related to the proposed changes in the quantity and frequency of water releases as part of the operation of Pure Water.

Stream gage data from a LACPW gaging station (Station No. U8-R) located approximately 1.1 miles downstream of Morris Dam, and Metropolitan water delivery data from USG-3 over a 25-year timespan (1997 to 2021) were used to estimate the amount of water released at Morris Dam and analyze Metropolitan's surface flow contributions to the San Gabriel River under existing conditions and anticipated Pure Water conditions (Metropolitan 2024). Over the past 25 years, releases from Morris Dam have averaged 68,000 AFY with historically high releases (combined USG-3 and Morris Dam releases) occurring in January and February, and the highest flows in water years 1998 and 2005 (wet years). Deliveries from Metropolitan via USG-3 have averaged approximately 30,000 AFY over the past 25 years. On average, the deliveries from USG-3 represent about 30 percent of the contributed surface flow between Morris Dam and Santa Fe Dam. About 25 percent of the time, especially in dry years, Morris Dam does not perform water releases and all surface flow contributions in this reach of the San Gabriel River are from USG-3. For example, during 2015 and 2016 (dry years), almost all contributions to surface flow in the San Gabriel River downstream of Morris Dam were from USG-3.

Under Pure Water, Metropolitan would continue providing groundwater replenishment in the Main San Gabriel Basin; however, deliveries would occur at the Santa Fe Spreading Grounds and San Gabriel Canyon Spreading Grounds, as well as potential new spreading facilities or injection wells, rather than at USG-3. Operation of Pure Water would reduce the releases to the San Gabriel River by a total of about 700,000 AF over a 25-year period, or about 30,000 AFY. This modification would reduce total surface flow in the reach between Morris Dam and Santa Fe Dam by an average of about 30 percent.

This proposed change in deliveries from USG-3 would represent a moderate reduction in the amount of surface water that is released into the San Gabriel River below Morris Dam. However, it should be noted that the water deliveries from USG-3 are not completed on a regular schedule, the frequency and quantity of deliveries vary each year, and there have been years where no water deliveries were completed. In general practice, under existing conditions, water deliveries at USG-3 are coordinated with Morris Dam releases as deliveries cannot occur at the same time as dam releases, which primarily occur during the rainy season and winter to early spring months (January to April). Historically, water deliveries at USG-3 are at their highest in September, October, and November. Most of the surface flow

under both existing conditions and Pure Water conditions occurs primarily during the winter and early spring between January and April.

The portion of the San Gabriel River that has the potential to be affected by the proposed changes in water releases can be delineated into an upper reach and a lower reach for analysis based on differences in topography, hydrology, and flood control management infrastructure, among other factors (**Figures 5.2-7a** and **5.2-7b**).

The upper reach of the river encompasses an approximately 2.7-mile section of the river between USG-3 and Roberts Canyon, just south of Mountain Laurel Way, where a tributary meets the San Gabriel River. This reach of the river flows almost year-round (though the furthest downstream portion of this segment may be intermittent during summer months), is located in a narrow canyon and bordered by steep slopes, contains a higher level of sinuosity (bends in a stream), and has a steeper grade than the lower reach. Several grade stabilization structures occur along this reach of river, including an access patrol road that crosses the San Gabriel River just downstream of Morris Dam near the USG-3 service connection. Aspen and Buena Vista Environmental Consulting conducted biological resource assessments and focused surveys for LBVI and SWFL along this stretch of river in 2017, 2018, and 2021 (Aspen 2021a and 2021b), and HELIX conducted a general biological survey and habitat assessment of the area in June 2023 (HELIX 2025). Vegetation along this reach of river includes stretches of riparian scrub, riparian forest, and riparian woodland habitat interspersed with open canopy areas, slopes vegetated with chaparral and coastal sage scrub, and patches of alluvial fan sage scrub along flatter portions of the canyon bottom that border the river (**Figure 5.2-7a**). Protocol surveys for LBVI and SWFL conducted by Aspen in 2017 and 2021 were negative for both species. However, several special-status species were documented within this reach, including three special-status plant species (San Gabriel Mountain dudleya [*Dudleya densiflora*], Engelmann oak, and San Gabriel Mountains leather oak [*Quercus durata* var. *gabrielensis*]) and 10 special-status animal species (bald eagle [*Haliaeetus leucocephalus*], yellow-breasted chat [*Icteria virens*], yellow warbler [*Setophaga petechia*], peregrine falcon [*Falco peregrinus*], osprey [*Pandion haliaetus*], southwestern pond turtle, two-striped garter snake, San Diegan tiger whiptail [*Aspidoscelis tigris stejnegeri*], arroyo chub, and San Gabriel chestnut snail [*Glyptostoma gabrielense*]).

The lower reach of the river encompasses an approximately 3.2-mile section of the river between Roberts Canyon and I-210 where the rubber dam diverts water along the San Gabriel River to the Santa Fe Spreading Grounds (**Figure 5.2-7b**). Two ephemeral tributaries enter the San Gabriel River from the western mountains at Fish Canyon and Van Tassel Canyon. This reach of the river is intermittent and generally dry during the summer months; though during wetter years, the river may carry water almost year-round as a result of run-off from the San Gabriel Mountains and water releases from Morris Dam and USG-3. This reach of the river is characterized as a relatively straight, broad alluvial fan. The river increases in width from approximately 315 feet across at Roberts Canyon to 1,400 feet at Fish Canyon and has been highly modified for flood risk management by the USACE with construction of the Santa Fe Dam, embankment, and spillway being completed in 1949. Sixteen rock drop structures occur at regular intervals along this reach of river and span the width of the river and associated floodplain (from bank to bank). The banks of the river are also leveed on both sides for flood control purposes. The majority of this reach of the river was included in the BSA as part of the project-level surveys for the backbone pipeline. Vegetation along this reach of river is characterized by riparian scrub and forest, including areas that are dominated by non-native riparian species, such as tamarisk bordering the San Gabriel River, and alluvial fan sage scrub dominating the broader floodplain, though pockets are dominated by non-native vegetation, such as fountain grass (**Figure 5.2-7b**). Protocol surveys for Crotch's bumble bee,

CAGN, LBVI and SWFL were conducted by HELIX between 2022 and 2024 (HELIX 2025). Surveys for Crotch's bumble bee and SWFL were negative. However, several special-status species were documented, including CAGN, LBVI, willow flycatcher (WIFL; *Empidonax traillii*), Cooper's hawk (*Accipiter cooperi*), Lawrence's goldfinch (*Spinus lawrencei*), yellow-breasted chat, yellow warbler, osprey, southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and Vaux's swift (*Chaetura vauxi*) (**Figures 5.2-7b, 5.2-9u,** and **5.2-9w**).

In addition, critical habitat for SWFL is present along both reaches of the river, occurring from the Santa Fe Dam Recreation Area north to Morris Dam (**Figure 5.2-2**). Portions of these reaches contain suitable riparian habitat with potential to support this species (**Figures 5.2-7a** and **5.2-7b**). Though migrant WIFLs have been documented within this area, including four migrants documented by HELIX in 2022, no breeding SWFL were detected by protocol surveys conducted by Aspen in 2017 and 2021 (Aspen 2021a) and HELIX in 2022 (HELIX 2025), and no documented breeding occurrences of the species occur along the San Gabriel River. The most recent recorded breeding occurrence of SWFL within the vicinity is from 1997 and is located approximately 13 miles northeast of the BSA along Bear Creek (CDFW 2022). Migrating flycatchers may utilize riparian habitat along the San Gabriel River as stop-over habitat, but breeding pairs are not anticipated based on the repeated negative survey results, lack of recent observations, and the declining status of the species within the region.

Alluvial fan sage scrub present within the floodplain of the San Gabriel River was found to support the federally listed threatened CAGN in the lower reach of the river to the north of I-210. Alluvial fan sage scrub occurs on washes and gently sloping alluvial fans, growing on well-drained soils. This habitat is adapted to infrequent and severe flood events. Washes that support alluvial fan sage scrub typically lack surface water for most of the year and are characterized by well-drained soils. As such, alluvial fan sage scrub does not have a high degree of water dependence for plant survivorship, and the reduction in surface water related to suspension of water deliveries at USG-3 is not anticipated to result in the loss of alluvial fan sage scrub or result in habitat conversion.

Water-dependent wetland and riparian habitat found to support, or with potential to support, special-status species that inhabit these communities, such as yellow-breasted chat, yellow warbler, and LBVI, occurs along the upper and lower reaches of San Gabriel River downstream of Morris Dam and USG-3. These habitats rely on both surface flows and groundwater for survivorship. In relation to surface flows, the amount of water released from both Morris Dam and USG-3 fluctuates between years, though dam releases and water deliveries from Metropolitan predominantly occur during the rainy season and winter to early spring months (January to April). Also, water deliveries at USG-3 are at their highest in late-fall: September, October, and November. The typical timing of water deliveries during the late-summer monsoonal rains and winter rainy season coincides with the timing of natural rain events. As such, the wetland and riparian vegetation downstream of USG-3 likely does not have a high dependence on the timing of surface flows related to water deliveries from USG-3. Additionally, most water deliveries occur during the rainy season when the river would be expected to already contain surface flows as a result of natural runoff. Therefore, the volume of the USG-3 water deliveries likely does not play a significant role in the health and survivorship of wetland and riparian vegetation along the San Gabriel River downstream of the USG-3 connection as surface flows would likely already be present during most water deliveries. The USG-3 water deliveries may be more influential in the persistence of surface flows into the summer and late-summer months, especially during drier years. However, in the current condition, the river is intermittent and sections of the river, particularly downstream of Roberts Canyon where the river and associated floodplain begin to dramatically widen outwards towards the bottom of San Gabriel Canyon, do not typically support year-round flows based on a review of historic

imagery (www.historicaerials.com and Google Earth). Riparian vegetation is also heavily reliant on the availability of groundwater and, as such, would not solely be dependent on surface flows.

In drought years, the low rainfall, especially over multiple, consecutive years, and high temperatures would likely result in low water levels at Morris Reservoir and San Gabriel Reservoir (located upstream of Morris Reservoir). During times of low water levels at the reservoirs, dam releases may be suspended, which can exacerbate water and drought stress that downstream vegetation, particularly water-dependent riparian vegetation, may already be experiencing. During these years, water deliveries from USG-3 may represent a more significant contributor to the health and survivorship of downstream wetland and riparian vegetation, although, historically during dry years and years of sustained drought, water deliveries to USG-3 were either reduced or suspended.

Though wetland and riparian vegetation downstream of USG-3 likely does not solely depend on water deliveries made by Metropolitan, the suspension of these deliveries and subsequent reduction in surface flows, especially during dry years, could influence stream height, the speed of flow, and streamflow duration and could cause water and drought stress to vegetation. Water and drought stress could adversely affect the vitality and resilience of downstream vegetation resulting in potential degradation or loss of wetland and riparian habitat that support special-status plant and animal species, including occupied LBVI habitat and USFWS critical habitat for SWFL. Degradation could occur through an increase in pests that damage native plants resulting in a loss of tree canopy or dying of limbs, ultimately leading to tree death. Tree death and the loss of tree canopy could lead to more favorable growing conditions for non-native plant species, allowing them to establish and propagate, which would further degrade the habitat or result in the conversion of native habitats to non-native habitats. Non-native habitats could result in less favorable conditions or habitat that is no longer suitable for special-status plant and animal species. Changes in the availability of water, including changes in the water level, flow rates, and duration of surface flows, also have the potential to affect populations of invertebrate food sources for these species.

Surface flows are also important for water-dwelling or water-dependent plant and animal species, such the CDFW SSC arroyo chub, federally proposed threatened southwestern pond turtle, and CDFW SSC two-striped garter snake, all of which were documented to occur within the upper reach of the San Gabriel River. Other special-status aquatic fish species with potential to occur downstream of Morris Dam include the Santa Ana speckled dace. The upper reach of the San Gabriel River conveys water nearly year-round. Though some smaller sections may go dry during the late summer months, based on review of historical aerial imagery, water is still present just downstream of USG-3 and along smaller sections of the river. Though water deliveries could potentially result in lower and less sustained surface flows, the San Gabriel River would still receive runoff from the surrounding San Gabriel Mountains, water that seeps beneath Morris Dam, and Morris Dam releases.

Changes in the quantity and frequency of water releases at USG-3 have the potential to result in the decline or elimination of water-dependent wetland and riparian habitats along the reach of San Gabriel River downstream of the USG-3 connection and upstream of Santa Fe Dam. If this occurred to a level that made them no longer suitable for the special-status plant and animal species that inhabit or have potential to inhabit these areas, impacts would be considered significant. Because the extent of impacts cannot be fully predicted based on currently available information, impacts are presumed to be **significant**.

Santa Fe Dam Spillway

The Santa Fe Dam Spillway is located in the City of Irwindale to the northwest of the Santa Fe Dam Recreation Area. Water is released from Morris Dam, then flows downstream along the San Gabriel River where it is diverted by a rubber dam to the Santa Fe Spreading Grounds (**Figure 5.2-8**). Water within the Santa Fe Spreading Grounds is discharged into the Santa Fe Dam Spillway during regular operations of the facility, though the amount of water discharged into the spillway varies depending on environmental factors (such as annual rainfall amounts) and operational needs. The spillway channel is approximately 1,200 feet wide and 5,000 feet long and contains a number of relatively evenly spaced check dams throughout its length that are meant to slow down and contain surface water. LACPW releases water into the spillway channel on an intermittent basis.

Under existing conditions, LACPW water releases into the spillway channel average about 6,500 AFY. Pure Water would replace releases at existing service connections, as discussed above, with releases into the spillway channel. As a result, LACPW releases would be reduced. With Pure Water, the anticipated releases (including LACPW'S reduced releases) into the spillway would be about 4,100 AFY, which represents an approximately 36 percent reduction in the overall water released to the spillway compared to existing conditions. Also under Pure Water, water releases into the spillway channel would be slightly less frequent than current conditions (8 percent probability of occurrence under Pure Water conditions compared to 12 percent probability of occurrence under existing conditions).

A large portion of the Santa Fe Dam Spillway was included in the BSA as part of the project-level surveys for the backbone pipeline. As a result, although evaluation of Pure Water impacts on the spillway due to changes in water releases is more general, detailed information is available regarding the biological resources in the spillway. Vegetation within the spillway is predominantly comprised of alluvial fan sage scrub, though disturbed wetland and mule fat scrub habitat occur at the northern/upstream end where LACPW releases water from an existing headwall at the northwestern corner of the spillway (**Figure 5.2-8**). The mule fat scrub habitat is relatively open and sparse, located in an upland setting, and is not located adjacent to other riparian scrub or forest habitat. As such, mule fat scrub within the spillway does not represent potential LBVI habitat. The alluvial fan sage scrub habitat has high potential to support CAGN; however, CAGN was not detected within the spillway during protocol-level surveys conducted for project-level facilities and components. Additionally, no special-status plant species were documented to occur within the spillway during surveys conducted for the project-level facilities and components (refer to Section 5.2.1.4).

The reduction in water deliveries, both in frequency and quantity, is not anticipated to have an adverse effect on vegetation within the spillway channel or result in the conversion of existing habitat types. The disturbed wetland and mule fat scrub vegetation is located at the upstream portion of the spillway near the headwall where current releases are discharged into the spillway and in areas that periodically flood between the first three check dams. The spillway would continue to receive water releases at this location under Pure Water; no change in the discharge location into Santa Fe Dam Spillway is proposed under Pure Water. These releases would continue to result in periodic flooding and saturation of soils within the upstream portion of the spillway, maintaining the hydrologic conditions that support the existing wetland habitat types. The alluvial fan sage scrub habitat that dominates the spillway is adapted to sandy soils and intermittent flooding. These conditions are anticipated to remain relatively unchanged under the Pure Water conditions because the areas will retain their soil properties and still be subject to intermittent flooding conditions from natural storm events. Therefore, the impact to special-status plant and animal species with potential to inhabit the spillway due to a reduction of water

deliveries at this location would be **less than significant** as the existing habitats with potential to support these species would remain unaffected.

Project-Level Analysis

Analysis of project-level impacts includes potential direct and indirect impacts associated with implementation of Pure Water. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Direct impact areas associated with project implementation include open cut trenching for construction of the backbone pipeline, excavation of portals at each end of proposed trenchless construction along the backbone pipeline, construction or use of temporary and permanent access roads, temporary use of staging and storage areas, construction of ancillary facilities (i.e., access ways, vacuum valves, and other operational structures or features), and construction of facilities at the Joint Treatment Site. The majority of project impacts would be temporary (i.e., areas disturbed by open cut trenching or excavation would be backfilled, repaved, and/or revegetated, as applicable). Permanent impacts encompass ancillary facility locations, newly constructed access roads to these facilities, and facilities at the Joint Treatment Site. Indirect impacts consist of secondary effects of a project, including noise, decreased water quality (e.g., through sedimentation, urban contaminants, or accidental fuel release), fugitive dust, colonization of non-native plant species, animal behavioral changes, and night lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes longer to become apparent.

Operational activities for project-level facilities and components may include, but are not limited to, the following activities: patrolling, inspections, operation of facilities, routine maintenance of facilities to maintain proper function, maintenance of access roads, and maintenance of vegetation within and surrounding above-ground permanent features such as accessways. Operational activities would not expand the footprint, use, or function of the facilities. As such, native habitat surrounding these facilities would not be removed as part of operational activities where habitat occurs outside established ROWs and developed footprints. Implementation of applicable ECs during operational activities, such as conducting nesting bird surveys prior to vegetation trimming during the bird breeding season (**BIO-EC-2**) and shielding of artificial nighttime lighting away from native habitat areas (**BIO-EC-3**) would minimize and avoid potential impacts to special-status plant and animal species. In addition, Metropolitan would comply with local noise ordinances and, where applicable, implement Metropolitan's standard operational protocols for protection of biological resources during operational activities such as timing maintenance activities with potential to directly or indirectly impact special-status species outside of applicable breeding and nesting seasons. Therefore, potential impacts to special-status plant and animal species related to operational activities would be **less than significant** and are not discussed further in this section.

Special-Status Plant Species

As discussed in Section 5.2.1, several special-status plant and animal species have been recorded or have high potential to occur within the BSA. Impacts to state and/or federally listed plant species are considered potentially significant due to their protected status and state and federal regulations regarding potential take of these species and/or critical habitat. Generally, impacts to plant species with a CRPR of 1 or 2 are considered potentially significant due to their higher sensitivity status, whereas CRPR 3 and 4 species are relatively widespread, and impacts to such species would not substantially reduce their populations in the region and are typically not considered significant per CEQA. No special-

status plant species were observed or have potential to occur within the Joint Treatment Site due to lack of suitable habitat. Therefore, the following discussion focuses on the potential impacts of the backbone pipeline on special-status plant species.

State and/or Federally Listed Plant Species

Although no state or federally listed plant species were documented within the BSA, the following discussion addresses a state and federally listed plant species with a high potential of occurrence within the BSA.

Nevin's Barberry

One state and federally listed species, Nevin's barberry, was determined to have a high potential to occur within the BSA in areas of suitable habitat. Nevin's barberry is state and federally listed endangered and has a CRPR of 1B.1. The species grows on sandy or gravelly soils within chaparral, woodlands, coastal sage scrub, and riparian habitats and was observed outside of the BSA in the Whittier Narrows Recreation/Natural Area in 2009 (Calflora 2022). In this portion of the backbone alignment, the direct impact area would be largely contained within existing road ROWs, public and utility easements, and disturbed areas that do not contain suitable habitat for the species. However, portions of the backbone alignment that occur outside of these areas and have the potential to support the species include the segment that parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**) and the segment that occurs within the Santa Fe Dam Spillway (**Figure 5.2-9x**). Construction in these areas would result in direct impacts to coastal sage scrub and alluvial fan sage scrub habitat with the potential to support the species. Although the species has been documented within the vicinity of the backbone alignment and has a high potential to occur within the BSA, this conspicuous perennial shrub was not observed during the rare plant surveys; therefore, no impacts are anticipated to occur. Construction of the project-level facilities and components in this area, however, is not anticipated to commence for several years and would be constructed within multiple phases spanning several years. As such, there is potential for impacts to occur to the species if the species were to recruit into suitable habitat areas within the direct impact area. Impacts to Nevin's barberry are considered **potentially significant**.

CRPR 1 or 2 Plant Species

Two CRPR 1 or 2 plant species were observed within the BSA: Torrey Pine and San Diego marsh-elder. Torrey pine has a CRPR of 1B.2 and San Diego marsh-elder has a CRPR of 2B.2. The observed Torrey pine and San Diego marsh-elder individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations. As such, these individuals are not considered sensitive and do not require protection. Furthermore, they are located approximately 1,100 feet from the proposed direct impact area. **No impact** would occur.

Two CRPR 1 or 2 plant species, Parish's gooseberry and Sonoran maiden fern, were determined to have high potential to occur within the BSA, although they were not observed during any of the biological surveys completed for Pure Water. Parish's gooseberry has a CRPR of 1A, and Sonoran maiden fern has a CRPR of 2B.2. Parish's gooseberry occurs in riparian woodlands that are found within the BSA along the San Gabriel River (**Figures 5.2-9y** and **5.2-9z**). The backbone pipeline would avoid direct impacts to the San Gabriel River and would not result in impacts to riparian habitats associated with this species; therefore, no impacts are anticipated to occur to Parish's gooseberry. Construction of the project-level facilities and components in this area, however, is not anticipated to commence for several years and

would be constructed within multiple phases spanning several years. As such, there is the potential for unforeseen impacts to occur to the species if it were to recruit into suitable habitat areas within the direct impact area. Impacts to Parish's gooseberry are considered **potentially significant**.

Sonoran maiden fern occurs in meadows, seeps, and streams and has been observed north of the BSA within the San Gabriel Mountains. As such, the species has a high potential to occur within the upstream portion San Gabriel River (**Figures 5.2-9y** and **5.2-9z**). The backbone pipeline would avoid direct impacts to the San Gabriel River; therefore, no impacts are anticipated to occur to Sonoran maiden fern. Construction of the backbone pipeline in this area, however, is not anticipated to commence for several years and would be constructed within multiple phases spanning several years. As such, there is the potential for unforeseen impacts to occur to the species if it were to recruit into suitable habitat areas within the direct impact area. Impacts to Sonoran maiden fern are considered **potentially significant**.

CRPR 3 or 4 Plant Species

One CRPR 4 plant species was observed within the BSA, Coulter's matilija poppy, which has a CRPR of 4.2. The observed Coulter's matilija poppy individuals consist of cultivated plants that have been planted as part of landscaping and do not represent naturally occurring populations. As such, these individuals are not considered sensitive and do not require protection. Furthermore, they are located approximately 960 feet from the proposed direct impact area. **No impact** would occur.

Four CRPR 3 or 4 plant species were determined to have high potential to occur within the BSA, although none of the species were observed during any of the biological surveys completed for Pure Water: Plummer's mariposa lily, southern California black walnut, Engelmann oak, and Robinson's pepper-grass. Plummer's mariposa lily, southern California black walnut, and Engelmann oak have a CRPR of 4.2; and Robinson's pepper-grass has a CRPR of 4.3.

Plummer's mariposa lily grows in granitic and rocky soils within grasslands, chaparral, coastal sage scrub, woodlands, and coniferous forests and has been observed within the foothills of the San Gabriel Mountains. Portions of the backbone pipeline that occur outside of road ROWs and other developed or disturbed areas that have the potential to support the species include the segment that parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**) and the segment within the Santa Fe Dam Spillway where coastal sage scrub and alluvial fan sage scrub habitat would be impacted (**Figure 5.2-9x**). If the species were to recruit into suitable habitat areas within the direct impact area, the species would not be expected to occur in sufficiently high numbers to represent a significant population based on the multiple reported occurrences within the project vicinity, many of which occur within conserved and open space areas such as the Angeles National Forest. Potential project impacts to Plummer's mariposa lily, if found to occur, would be **less than significant** given the species would be expected to occur in low numbers and is known to occur at other locations within the project vicinity and region.

Southern California black walnut grows on alluvial soils within coastal sage scrub, chaparral, woodlands, and riparian habitat and has been observed within the Whittier Narrows Recreation/Natural Area. The species has a high potential to occur along the San Gabriel River, which would be avoided by the backbone pipeline; therefore, no impacts are anticipated to occur to southern California black walnut. If the species were to recruit into suitable habitat areas within the direct impact area, the species would not be expected to occur in high numbers or to represent a significant population based on the multiple reported occurrences within the project vicinity. Many of these occurrences are located within open

space areas and other conserved lands associated with the Whitter Narrows Recreation/Natural Area, Turnbull Canyon Open Space, and Angeles National Forest. Potential impacts to southern California black walnut, if found to occur, would be **less than significant** given the species would be expected to occur in low numbers and is known to occur at other locations within the project vicinity and region. Cultivated individuals may occur within developed portions of the BSA where they have been planted as part of landscaping. If cultivated individuals were found to occur within the direct impact area, these individuals would not represent a naturally occurring population and, therefore, **no impact** related to special-status plant species would occur. However, mature, cultivated individuals may be subject to tree preservation/protection ordinances and policies within the County and various cities where the backbone alignment is located as discussed below in Section 5.2.5.5.

Engelmann oak occurs on slopes and foothills within grasslands, chaparral, oak woodland, and riparian woodlands and has been observed within the foothills of the San Gabriel Mountains. The species has the potential to occur within the northern portion of the BSA but was not observed during biological surveys; therefore, no impacts are anticipated to occur to Engelmann oak. If the species were to recruit into suitable habitat areas within the direct impact area, the species would not be expected to occur in high numbers or to represent a significant population based on the multiple reported occurrences within the vicinity of the backbone alignment. Many of these occurrences are located within conserved and open space areas and conserved lands associated with the Monrovia Wilderness Preserve and Angeles National Forest. Therefore, potential impacts to Engelmann oak, if found to occur, would be **less than significant**. Cultivated individuals may occur within developed portions of the BSA where they have been planted as part of landscaping. These individuals would not represent a naturally occurring population and, therefore, **no impact** related to special-status plant species would occur. However, mature cultivated individuals may be subject to tree preservation/protection ordinances and policies within the County and various cities where the backbone alignment is located as discussed below in Section 5.2.5.5.

Robinson's pepper-grass grows in openings of coastal sage scrub and chaparral and has been observed in the vicinity of the backbone alignment, particularly along the foothills of the San Gabriel Mountains. Portions of the backbone alignment that occur outside of road ROWs and other developed or disturbed areas that have the potential to support the species include the segment that parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**) and the segment within the Santa Fe Dam Spillway where coastal sage scrub and alluvial fan sage scrub habitat (**Figure 5.2-9x**) would be impacted. If the species were to recruit into suitable habitat areas within the direct impact area, the species would not be expected to occur in high numbers due to their low occurrence in the area or to represent a significant population based on the multiple reported occurrences within the project vicinity, many of which occur within the Angeles National Forest. Potential impacts to Robinson's pepper-grass, if found to occur, would be **less than significant** given the species would be expected to occur in low numbers and is known to occur at other locations within the project vicinity and region.

Special-Status Animal Species

No special-status animal species were observed or have potential to occur within the Joint Treatment Site due to lack of suitable habitat. Therefore, the following discussion focuses on the potential impacts of the backbone pipeline on special-status animal species.

Seventeen special-status animal species were detected within the BSA along the backbone alignment during biological surveys completed for the project-level facilities and components including: CAGN,

LBVI, WIFL, monarch butterfly (*Danaus plexippus*), San Diegan tiger whiptail, American white pelican (*Pelecanus erythrorhynchos*), California horned lark (*Eremophila alpestris actia*), Cooper's hawk, double-crested cormorant (*Nannopterum auritum*), Lawrence's goldfinch, loggerhead shrike (*Lanius ludovicianus*), osprey, southern California rufous-crowned sparrow, Vaux's swift, white-faced ibis, yellow-breasted chat, and yellow warbler. In addition, the following 15 special-status animal species were determined to have a high potential to occur within portions of the BSA: Crotch's bumble bee, arroyo chub, Santa Ana speckled dace, California newt, San Diegan legless lizard, two-striped garter snake, burrowing owl, sharp-shinned hawk, Costa's hummingbird, merlin, pallid bat, western mastiff bat, western red bat, western yellow bat, and pocketed free-tailed bat. Critical habitat for CAGN and SWFL also occurs within the BSA. The potential impacts of the backbone pipeline on these species and critical habitat are discussed below.

State and/or Federally Listed and Candidate Animal Species

Coastal California Gnatcatcher

Coastal California gnatcatcher is a federally listed threatened species and CDFW SSC. The species was detected during the protocol-level survey effort in the northern portion of the BSA. Observations included two CAGN pairs and three individual male CAGN within coastal sage scrub and alluvial fan sage scrub habitat located along the segment of the San Gabriel River north of I-210 (**Figures 5.2-9y** and **5.2-9z**). The backbone pipeline would impact coastal sage scrub and alluvial fan sage scrub habitat found to support CAGN in these areas.

Specifically, the backbone pipeline would impact occupied CAGN habitat where the backbone alignment parallels the San Gabriel River Trail north of Huntington Drive. Construction of the backbone pipeline would result in the removal of coastal sage scrub and alluvial fan sage scrub habitat located east of the existing paved trail and access road (**Figures 5.2-9y** and **5.2-9z**). However, extensive coastal sage scrub and alluvial fan sage scrub habitat occur outside of the direct impact area, particularly to the west of the San Gabriel River Trail along the San Gabriel River, where the majority of CAGN observations occurred. Therefore, construction of the backbone pipeline is not anticipated to adversely affect the long-term survival of CAGN within the area as extensive, suitable habitat in the immediate vicinity of the backbone alignment would remain available for CAGN, including habitat found to be occupied by CAGN. Potential CAGN habitat also occurs in other portions of the direct impact area at the Santa Fe Dam Spillway (**Figure 5.2-9x**) and Dominguez Gap Wetlands (**Figure 5.2-9e**). Though CAGN was not found in these areas during the protocol-level survey effort, construction of the backbone pipeline is not anticipated to commence for several years and would occur in multiple phases spanning several years. As such, there is potential for CAGN to move into areas that support suitable CAGN habitat within or immediately adjacent to the direct impact area in the future. Impacts to occupied CAGN habitat (i.e., habitat where CAGN were found to occur) would be **significant**. In addition to potentially significant impacts related to removal of occupied habitat, the backbone pipeline has the potential to impact breeding/nesting CAGN if construction activities were to occur during the CAGN breeding season (February 15 through August 31) and result in the removal of occupied CAGN habitat. Direct impacts to breeding/nesting CAGN would be **significant**.

Additionally, indirect impacts to CAGN could occur if construction activities were to take place within 500 feet of occupied CAGN habitat during the CAGN breeding season and were to generate noise levels greater than 60 A-weighted decibels (dBA) or exceed ambient noise levels if greater than 60 dBA, at an active CAGN nest site. Indirect impacts to nesting CAGN would be **significant**.

Critical habitat for CAGN occurs within the central portion of the BSA in association with the Whittier Narrows Recreation/Natural Area and Sycamore Canyon. The backbone pipeline would not impact lands designated as critical habitat for CAGN; therefore, **no impact** would occur to CAGN critical habitat.

Least Bell's Vireo

LBVI is a state and federally listed endangered species. A total of 13 male LBVIs were detected during the biological surveys in the central portion of the BSA within riparian habitat along the San Gabriel River and San Jose Creek near the Whittier Narrows Recreation/Natural Area (**Figures 5.2-9r** and **5.2-9s**) and within riparian habitat along the San Gabriel River north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**). In addition, a single LBVI pair was detected within riparian habitat along an unnamed tributary to San Gabriel River located between Peck Road and Rose Hills Road to the east of I-605 near the Whittier Narrows Recreation/Natural Area (**Figure 5.2-9q**). Within the BSA, suitable breeding habitat occurs along the San Gabriel River and San Jose Creek, though smaller patches of riparian habitat also occur along unnamed drainages. The direct impact area would be largely contained within existing road ROWs, public and utility easements, and disturbed areas that do not contain suitable habitat for the species. The backbone pipeline would avoid direct impacts to riparian habitat found to support or with the potential to support LBVI. Therefore, **no direct impacts** to LBVI would occur.

Indirect impacts to LBVI could occur if construction activities were to take place within 500 feet of occupied LBVI habitat during the vireo breeding season (March 15 through September 15) and were to generate noise levels greater than 60 dBA or exceed ambient noise levels if greater than 60 dBA, at an active LBVI nest site. Indirect impacts to nesting LBVI would be **significant**.

Willow Flycatcher/Southwestern Willow Flycatcher

WIFL is a state listed endangered species. SWFL is a state and federally listed endangered species and is the subspecies of WIFL that breeds within southern California. Four migrant WIFLs were detected on May 17, 2022, along the San Gabriel River within the northern portion of the BSA, north of Huntington Drive, during the protocol-level SWFL surveys (**Figure 5.2-9z**). No other WIFLs were detected on any of the subsequent surveys. As such, the migrating WIFLs were not able to be identified to subspecies as the detected individual may belong to another subspecies that breeds in central and northern California. No breeding SWFL were detected during the surveys, and no documented breeding occurrences of the species occur along the San Gabriel River. The most recent recorded breeding occurrence of SWFL within the vicinity is from 1997 and is located approximately 13 miles northeast of the BSA along Bear Creek (CDFW 2022). Migrating WIFLs may temporarily utilize riparian habitat within the BSA as a stop-over habitat, but breeding pairs of SWFL are not anticipated based on the negative survey results, lack of recent observations, and the declining status of the species within the region. Potentially suitable breeding habitat for SWFL within the BSA is located along portions of the San Gabriel River and San Jose Creek that support dense riparian habitat. The direct impact area would be largely contained within existing road ROWs, public and utility easements, and disturbed areas that do not contain suitable habitat for the species. The backbone pipeline would avoid direct impacts to riparian habitat along the San Gabriel River and San Jose Creek with the potential to support breeding SWFL. Therefore, **no direct impacts** to WIFL or SWFL would occur.

Though breeding SWFL was not found to occur along the San Gabriel River during the protocol-level survey effort, construction of the backbone pipeline is not anticipated to commence for several years and would be constructed within multiple phases spanning several years. As such, there is potential for SWFL to move into suitable habitat areas immediately adjacent to the direct impact area in the future.

Indirect impacts to SWFL could occur if construction activities were to take place within 500 feet of occupied SWFL habitat during the flycatcher breeding season (May 1 through September 1) and were to generate noise levels greater than 60 dBA or exceed ambient noise levels if greater than 60 dBA, at an active SWFL nest site. Indirect impacts to nesting SWFL would be **significant**.

Critical habitat for SWFL occurs within the northern portion of the BSA from the Santa Fe Dam Recreation Area north along the San Gabriel River and continues into the San Gabriel Mountain foothills at Morris Reservoir (**Figure 5.2-3**). The backbone pipeline would result in direct impacts to 8.37 acres of critical habitat for the species. These impacts would be comprised of upland habitats that are not suitable for SWFL, including 4.66 acres of alluvial fan sage scrub (including disturbed) and 0.74 acre of coastal sage scrub, 1.60 acres of disturbed habitat, and 1.37 acres of developed areas. These areas do not support physical or biological features that are essential for the species, as defined by the USFWS (USFWS 2013), which generally includes dense riparian vegetation interspersed with openings of open water or sparser vegetation that contain a variety of insect prey populations. Therefore, the backbone pipeline would not result in impacts to or adverse modification of critical habitat that contains the physical or biological features that are essential for SWFL. As such, impacts to SWFL critical habitat would be **less than significant**.

Monarch Butterfly

Monarch butterfly is a federal candidate species for listing. Individuals were observed flying within nursery areas east of the San Gabriel River and north of San Jose Creek on multiple occasions (**Figure 5.2-9r**). This species is expected to occur as a migrant, wintering visitor, and year-round resident within the BSA and is known to overwinter within Los Angeles County, primarily along the coastal regions within canyons, parks, and cemeteries. However, here are no known overwintering sites within the BSA (Xerces Society 2024). The direct impact area would be largely contained within existing road ROWs, public and utility easements, and disturbed areas that do not contain suitable habitat for the species. Furthermore, the species' host plant, milkweed (*Asclepias* spp.), was not observed within the BSA during biological surveys conducted for Pure Water. The backbone pipeline would not result in direct impacts to potential wintering habitat for the species and the species' larval host plants. Construction activities have the potential to result in dust, which could cover vegetation and potential butterfly nectaring resources adjacent to active work areas and adversely affect plant health, or inadvertent intrusion into suitable habitat areas outside of the direct impact areas. These potential impacts would be avoided or minimized through implementation of **AQ-EC-2** and **BIO-EC-1,** which require dust suppression and temporary fencing of construction work areas to prevent inadvertent intrusion into adjacent habitat. Therefore, potential impacts to monarch butterflies would be **less than significant**.

Crotch's Bumble Bee

Crotch's bumble bee is a state candidate species for listing. The species primarily occurs in California and inhabits open grasslands and scrub habitats containing flowering plants. Crotch's bumble bee forages on a variety of plant species with open flowers and short corollas including milkweeds, lupines (*Lupinus* spp.), sages (*Salvia* spp.), phacelias (*Phacelia* spp.), lotus (*Acmispon* spp.), buckwheat (*Eriogonum* spp.), and poppies (*Eschscholzia* spp.), among others. The species was not observed during focused surveys conducted in 2024 but has a high potential to occur within the BSA based on the presence of suitable habitat and reported sightings within the Pure Water area (iNaturalist 2024 and Bumble Bee Watch 2024).

The backbone pipeline would impact coastal sage scrub and alluvial fan sage scrub habitat with potential to support Crotch's bumble bee within the Santa Fe Dam Spillway and along the San Gabriel River where the backbone alignment parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9x**, **5.2-9y** and **5.2-9z**). Though Crotch's bumble bee was not found in these areas during the focused surveys, construction of the backbone pipeline is not anticipated to commence for several years. As such, there is potential for Crotch's bumble bee to move into areas that support suitable habitat within or immediately adjacent to the direct impact area prior to construction. Construction activities have the potential to result in dust, which could cover vegetation and potential nectaring resources for Crotch's bumble bee adjacent to active work areas and adversely affect plant health, or inadvertent intrusion into suitable habitat areas outside of the direct impact areas. These potential impacts would be avoided or minimized through implementation of **AQ-EC-2** and **BIO-EC-1**, which require dust suppression and temporary fencing of construction work areas to prevent inadvertent intrusion into adjacent habitat. If listed, direct impacts to Crotch's bumble bee would be considered **significant**. Additionally, if Crotch's bumble bee remains a state candidate species for listing or is listed and if take is expected, Pure Water must obtain an incidental take permit pursuant to FGC Section 2081(b) and the CESA.

Burrowing Owl

BUOW is a state candidate species for listing. In California, the species is found from Central California east to the Mojave Desert and south to coastal San Diego County. BUOW is primarily associated with grasslands, preferring areas with level to gentle topography and well-drained soils, but also occupies agricultural areas, vacant lots, and pastures. The species requires underground burrows for nesting and roosting that are typically dug by other species such as the California ground squirrel (*Otospermophilus beecheyi*) but will also utilize natural rock cavities, debris piles, culverts, and pipes for nesting and roosting. Several wintering records of BUOW occur within the BSA within the Santa Fe Dam Recreation Area and San Gabriel Coastal Spreading Grounds (eBird 2022). A focused habitat assessment was conducted for BUOW within the BSA to evaluate suitable habitat for potential to support the species and document potential burrow locations. Portions of the backbone alignment that contain potentially suitable habitat include non-native grasslands, sparse coastal sage scrub, or other disturbed habitat areas within SCE transmission easement areas. Potential burrows, including rock outcrops, concrete piles, and drainpipes, were documented within these areas. No active BUOW burrows, defined by the CDFW as those where BUOW and/or BUOW sign (pellets, feathers, tracks, whitewash, etc.) have been observed at or near a burrow entrance in the last three years (CDFW 2012), were observed in the BSA.

Potentially suitable habitat in the BSA is determined to be of low to moderate quality for the BUOW based on the limited amount of habitat available, existing disturbances, densely urbanized setting, and sandy and silty soils in areas that would not be suitable for burrowing construction and BUOW occupation. BUOW has been extirpated as a breeder from the coastal and interior basin of Los Angeles County, with breeding records limited to the northeastern portion of the county in the high desert regions of Antelope Valley, Lancaster, and Palmdale (Shuford et al. 2008). Reported observations of the species in the BSA and adjacent areas are limited to the wintering and migratory seasons. As such, overwintering and migratory owls may occur in the BSA, but breeding pairs are not expected based on past development and disturbances and lack of recent breeding records. Though no owls or active burrows were observed during the biological surveys, construction of the backbone pipeline is not anticipated to commence for several years. As such, there is potential for BUOW to move into the potential habitat areas located within the direct impact area in the future and prior to construction. Potential direct and indirect impacts to BUOW would be considered **significant**.

Other Special-Status Animal Species

The following 13 special-status species were also found to occur within portions of the BSA: San Diegan tiger whiptail, American white pelican, California horned lark, Cooper's hawk, double-crested cormorant, Lawrence's goldfinch, loggerhead shrike, osprey, southern California rufous-crowned sparrow, Vaux's swift, white-faced ibis, yellow-breasted chat, and yellow warbler (**Figures 5.2-9a** through **5.2-9z**). Additionally, the following 13 special-status animal species were determined to have a high potential to occur within portions of the BSA: arroyo chub, Santa Ana speckled dace, California newt, San Diegan legless lizard, two-striped garter snake, sharp-shinned hawk, Costa's hummingbird, merlin, pallid bat, western mastiff bat, western red bat, western yellow bat, and pocketed free-tailed bat. Potential impacts to these species are discussed below.

Birds

Construction of the backbone pipeline would include the removal of potential breeding habitat, including the removal of shrubs and trees, for six special-status bird species including southern California rufous-crowned sparrow, California horned lark, Costa's hummingbird, Cooper's hawk, Lawrence's goldfinch, and loggerhead shrike. In addition, construction activities would also occur adjacent to riparian habitat found to support, or with potential to support, the following four species: double-crested cormorant, osprey, yellow-breasted chat, and yellow warbler. As a regulatory requirement, construction must comply with the regulations and guidelines of the MBTA and FGC, which include the avoidance of active nests and implementation of nest avoidance buffers, as applicable. Implementation of **BIO-EC-2** would ensure that nesting bird surveys are conducted prior to the trimming, grubbing, or clearing of vegetation with potential to support nesting birds, and that active nests are avoided through the establishment of appropriate avoidance buffers. Therefore, potential direct and indirect impacts to these species and other nesting birds would be **less than significant**.

Reptiles

Two special-status reptiles have potential to occur within the direct impact area of the backbone alignment: San Diego tiger whiptail and San Diegan legless lizard. San Diegan tiger whiptail was found to occur within coastal sage scrub habitat located east of the Santa Fe Dam Spillway (**Figure 5.2-9x**) and San Diegan legless lizard has the potential to occur within coastal sage scrub and alluvial fan sage scrub habitat adjacent to the San Gabriel River that contains moist, loose soils. Portions of the backbone alignment that occur outside of road ROWs and other developed or disturbed areas that have the potential to support the species include the segment that parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**) and the segment within the Santa Fe Dam Spillway (**Figure 5.2-9x**) where coastal sage scrub and alluvial fan sage scrub habitat would be impacted. Though the backbone pipeline would impact coastal sage scrub and alluvial fan sage scrub habitat with potential to support these species, additional suitable habitat occurs adjacent to the direct impact area along the San Gabriel River and Santa Fe Dam Spillway that would be avoided by construction and remain available to the species. Furthermore, suitable habitat for the species occurs within the local area, including within open space areas and conserved lands associated with the San Gabriel Mountains, Santa Fe Dam Recreation Area, and Whittier Narrows Recreation/Natural Area. Construction activities have the potential to result in inadvertent intrusion into suitable habitat areas outside of the direct impact areas, which could result in unintended harm or mortality of San Diego tiger whiptail and San Diegan legless lizard individuals. Potential impacts would be avoided or minimized through implementation of **BIO-EC-1**, which requires temporary fencing of construction work areas to prevent inadvertent intrusion into adjacent habitat. Therefore, the backbone pipeline would not adversely

impact the local long-term survival of either species, and potential impacts to San Diegan tiger whiptail and San Diegan legless lizard would be **less than significant**.

Bats

There are documented occurrences of special-status and non-special-status bat species within the BSA (CDFW 2022; iNaturalist 2024). In addition, the Natural History Museum of Los Angeles County's Backyard Bat Survey, a community science-based acoustic monitoring study, has recorded several bat species within urban and suburban habitats of southern Los Angeles County that are located in the vicinity of the BSA. A focused habitat assessment was conducted within the BSA to identify and evaluate suitable bat roosting (including areas with potential to support day, night, and maternity roosts) and foraging habitat. Suitable bat roosting habitat within the BSA is primarily comprised of bridges and highway overpasses that occur along roadways and those that span the San Gabriel River and other stream courses. These features contain structural elements such as expansion joints, hinges, spaces between girders and diaphragms, and other gaps and cracks that bats have been documented to utilize for roosting (Johnston et al. 2019). Though no bats, bat carcasses, or bat sign were observed during the habitat assessment, the survey was limited to accessible portions of the bridge structures, which typically encompassed one end of the bridge. Most bridges had indicators of present or recent human activity and encampments. As bats are highly sensitive to nearby human activity, these disturbances and occupation by individuals experiencing homelessness may discourage bat use at the bridge edges; however, bats may still use the central portion of the bridge. The BSA also contains suitable riparian habitat and other natural and urban open space areas, including golf courses and parks, with mature trees that provide suitable roosting habitat for tree roosting species such western red bat. Suitable bat foraging habitat within the BSA occurs along the San Gabriel River, San Jose Creek, and other stream courses, and natural and urban open space areas, such as Santa Fe Dam Recreation Area and Whittier Narrows Recreation/Natural Area, which contain native vegetation and aquatic habitat that support and attract prey populations and provide drinking water for bats.

Though no bats or bat sign were observed during the habitat assessment, suitable bat roosting and foraging habitat occurs within the BSA. Therefore, there is potential for five special-status bat species to occur, including pallid bat, western mastiff bat, western red bat, western yellow bat, and pocketed free-tailed bat. Pallid bat, pocketed free-tailed bat, and western mastiff bat primarily roost on vertical cliffs, quarries, and rocky outcrops but also have potential to roost within bridges, tall buildings, and other artificial structures. Western red bat and western yellow bat are tree roosting species that have potential to roost within mature trees found within the BSA including willows, cottonwoods, sycamores, oak trees, and specifically for western yellow bat, palm trees. These species also have potential to utilize the BSA for foraging opportunities. Suitable roosting habitat within the BSA includes riparian habitat, mature trees, bridges, and overpasses. The backbone pipeline would not result in the direct removal of riparian habitat, bridges, or overpasses. However, the backbone alignment occurs within existing road ROWs and existing flood control and utility easements that contain mature landscape trees in select areas. These mature landscape trees have potential to support tree-roosting bat species and may require trimming or removal as part of project construction. Direct impacts to roosting bats would be considered **significant**.

Additionally, indirect impacts to special-status bat species could occur as a result of an increase of construction-generated noise levels, ground vibration caused by the operation of construction equipment, increased human activity, and artificial lighting. The increase in noise levels related to the operation of heavy machinery, including equipment that may emit ultrasonic noise that can interfere

with bats' ability to echolocate, vibrations caused by ground-disturbing activities, use of artificial nighttime lighting, and increases in human activity during active construction periods (particularly under bridges) may cause bats to abandon roosts, disrupt or prevent normal feeding and movement patterns, or cause avoidance of suitable foraging habitat (Bat Conservation Trust 2014; Johnston et al. 2019). Implementation of **BIO-EC-1** and **BIO-EC-3**, which include temporary fencing and lighting abatement, would avoid or minimize potential indirect impacts related to human activity and nighttime lighting. Indirect impacts to roosting bats related to construction noise and ground vibration would be considered **potentially significant**.

No Impacts

Nine of the special-status animal species with high potential to occur within the BSA are not anticipated to occur within the direct impact area, as suitable habitat is either absent or would be avoided by the backbone pipeline, or the species is not known to breed within the region. Arroyo chub and Santa Ana speckled dace are aquatic species that would only occur within the portion of the San Gabriel River north of Santa Fe Dam, if present. The backbone pipeline would not result in impacts to the San Gabriel River; therefore, no impacts to arroyo chub and Santa Ana speckled dace would occur. California newt and two-striped garter snake have the potential to occur within riparian habitat along the San Gabriel River and San Jose Creek that also would be avoided by the backbone pipeline. Therefore, the backbone pipeline would not result in impacts to California newt or two-striped garter snake. American white pelican, white-faced ibis, Vaux's swift, sharp-shinned hawk, and merlin occur as migrants or wintering visitors and are not known to breed in the region. As such, **no impact** to breeding/nesting individuals of these species would occur.

5.2.5.2 Topic 2: Sensitive Habitats

Would Pure Water 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 Wildlife or U.S. Fish and Wildlife Service?

Program-Level Analysis

Construction

As discussed in Section 5.2.1, sensitive habitats (including riparian habitat) occur within the Pure Water area, and construction activities for Pure Water have the potential to affect these habitats. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis*. Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited in or adjacent to areas that contain sensitive habitat. Once the specific locations of these program-level facilities and components are determined, additional, site-specific biological surveys would be conducted and vegetation in and adjacent to those locations would be characterized and mapped. If sensitive habitat within those areas cannot be avoided, impacts to affected sensitive habitat would be considered **significant**.

Reduction or suspension of imported water flows from service connections PM-26, CENB-48, and USG-3 would not involve construction; therefore, there would be **no impact** to sensitive habitats in these areas as a result of construction.

Operation

The operation of Pure Water would include discharging purified water into groundwater basins via the Santa Fe Spreading Grounds (including the Santa Fe Dam Spillway), as well as at the San Gabriel Canyon, Rio Hondo, and San Gabriel Coastal spreading grounds; potential new spreading grounds; and existing and potential new injection wells. These discharges would replace some or all of the releases of imported water at service connections PM-26, CENB-48, and USG-3. These changes in discharges and the potential impacts associated with changes in water delivery and stream flow conditions on sensitive habitats are discussed below. Operation of other Pure Water facilities and components is not expected to impact sensitive habitats.

PM-26 (Little Dalton Wash)

The earthen portion of Little Dalton Wash and Little Dalton Spreading Grounds that would receive reduced water deliveries from PM-26 under Pure Water is an approximately 0.6-mile-long reach. The reach is primarily characterized by uplands and habitat types that have a relatively low degree of water dependence for their survivorship, including open non-native grassland and disturbed habitat, with a patch of coast live oak woodland located downstream of the spreading grounds (**Figure 5.2-5**). One sensitive habitat type (i.e., those with a Rarity Ranking of S1 through S3), sycamore woodland, was mapped within the Discharge Study Area along Little Dalton Wash, at the top of the stream bank. Sycamore woodland does require moist soils and groundwater but generally does not have a high degree of water dependence outside of normal seasonal rainfall for survivorship once roots are established as western sycamores roots grow down towards the groundwater table. Surface flows, natural flooding, and deposit of alluvial sediment are all important natural factors that affect the recruitment and regeneration of western sycamore. These processes would continue to occur along Little Dalton Wash even with the reduction of water deliveries at the service connection. As such, the reduction in water deliveries is not anticipated to result in significant adverse effects to this habitat and impacts would be **less than significant**.

CENB-48 (San Dimas Wash)

The earthen portion of San Dimas Wash downstream of CENB-48 is characterized by alluvial fan sage scrub, mule fat scrub, arundo-dominated riparian, and coast live oak woodland (**Figure 5.2-6**). One sensitive habitat, alluvial fan sage scrub (S3), was mapped within the Discharge Study Area. Alluvial fan sage scrub is adapted to infrequent and severe flood events and washes that support this habitat typically lack surface water for most of the year and are characterized by well-drained soils. Though water releases at CENB-48 would be suspended, except for during wet years, San Dimas Wash would continue to receive runoff flows from San Dimas Canyon, which can be subjected to flash or severe flood events. As such, the overall hydrology of the wash, particularly the intermittent and ephemeral flows which are typically associated with alluvial fan sage scrub habitat, would not be significantly altered from suspension of releases from CENB-48. San Dimas Wash would still be an ephemeral to intermittent stream and vegetation within the downstream earthen portion of the wash is expected to remain in its current condition, with no loss of existing habitat types or conversion of existing habitat anticipated. Therefore, impacts to alluvial fan sage scrub as a result of the reduction of water deliveries would be **less than significant**.

USG-3 (San Gabriel River Between Morris Dam and the Santa Fe Dam)

Vegetation along the reach of the San Gabriel River between Morris Dam and Santa Fe Dam is characterized by stretches of riparian scrub, riparian forest, and riparian woodland habitat interspersed with open canopy areas, sloped hillsides vegetated with chaparral and coastal sage scrub, and patches of alluvial fan sage scrub within flatter sections of the canyon bottom in the upper reach and throughout the widened floodplain area in the lower reach (**Figure 5.2-7a** and **5.2-7b**). Three sensitive habitat types were mapped within the Discharge Study Area: alluvial fan sage scrub (S3), southern willow riparian forest (S3), and sycamore riparian woodland (S3).

Alluvial fan sage scrub occurs on washes and gently sloping alluvial fans, growing on well-drained soils. This habitat is adapted to infrequent and severe flood events. Washes that support alluvial fan sage scrub typically lack surface water for most of the year and are characterized by well-drained soils. As such, alluvial fan sage scrub does not have a high degree of water dependence for survivorship, and the reduction in surface water related to the suspension of water deliveries at USG-3 is not anticipated to adversely affect alluvial fan sage scrub downstream of the service connection or result in habitat conversion.

Southern willow riparian forest and southern riparian woodland are more water-dependent riparian habitats that occur in association with the San Gabriel River. These habitats rely on both surface flows and groundwater for survivorship. Existing water deliveries and proposed future conditions under Pure Water are described in Section 5.2.5.1.

Though wetland and riparian vegetation downstream of USG-3 does not solely depend on water deliveries made by Metropolitan, the suspension of these deliveries and subsequent reduction in surface flows, especially during dry years, could cause water and drought stress to vegetation, which could adversely affect the vitality and resilience of downstream vegetation resulting in potential degradation or loss of sensitive wetland and riparian vegetation as described in Section 5.2.5.1. The lower reach of the San Gabriel River is intermittent and is typically dry during the summer months. Therefore, the reduction in surface flows is expected to have less impact in the lower reach of San Gabriel River than in the upper reach. Impacts to sensitive habitats in both reaches as a result of the reduction of water deliveries are considered **potentially significant**.

Santa Fe Dam Spillway

Vegetation within Santa Fe Dam Spillway is predominantly comprised of alluvial fan sage scrub, though disturbed wetland and mule fat scrub habitat occur at the northern/upstream end where water is released from an existing headwall at the northwestern corner of the spillway (**Figure 5.2-8**). Alluvial fan sage scrub habitat is the only sensitive habitat present within the spillway, with a Rarity Ranking of S3; neither disturbed wetland nor mule fat scrub are considered sensitive natural communities. The reduction in water deliveries, both in frequency and quantity, is not anticipated to have an adverse effect on vegetation within the spillway channel or result in the conversion of existing habitat types. The alluvial fan sage scrub habitat that dominates the spillway is adapted to sandy soils and intermittent flooding. These conditions are anticipated to remain relatively unchanged under the Pure Water conditions because the areas would retain their soil properties and still be subject to intermittent flooding conditions. Therefore, impacts to alluvial fan sage scrub as a result of the reduction of water deliveries would be **less than significant**.

Project-Level Analysis

The project-level facilities and components would result in direct impacts to 412.95 acres of vegetation or other land cover types comprised of 54.38 acres of permanent impacts and 358.57 acres of temporary impacts (**Figures 5.2-9a** through **5.2-9z**). **Table 5.2-9** identifies vegetation communities and land use types and their associated impacts.

Table 5.2-9
VEGETATION COMMUNITY/LAND USES WITHIN THE BSA AND IMPACTS

Vegetation Community/Land Use Type	Rarity Ranking[1]	Impacts (acres)[2]		
		Temporary	Permanent	TOTAL
Wetlands/Riparian Habitats				
Southern Riparian Forest (including disturbed)	S3	-	-	0
Mule Fat Scrub (including disturbed)	S4	-	-	0
Southern Willow Scrub (including disturbed)	S4	-	-	0
Freshwater Marsh	S5	-	-	0
Tamarisk Scrub	SNA	-	-	0
Arundo-dominated Riparian	SNA	-	-	0
Non-native Riparian	N/A	0.04[3]	-	0.04
Disturbed Wetland	N/A	0.69[3]	-	0.69
Open Water	N/A	-	-	0
Unvegetated Habitat (Streambed)	N/A	-	-	0
	Subtotal	***0.73***	***0***	***0.73***
Upland Habitats/Other Land Use Types				
Alluvial Fan Sage Scrub (including disturbed)	S3	18.92	0.11	19.03
Coast Live Oak Woodland	S4	-	-	0
Coastal Sage Scrub - Laurel Sumac Dominated	S4	-	-	0
Coastal Sage Scrub (including disturbed)	S5	0.76	0.02	0.78
Non-native grassland	SNA	13.45	-	13.45
Non-native grassland (broadleaf-dominated)	SNA	-	-	0
Eucalyptus Woodland	SNA	0.19	-	0.19
Ornamental Vegetation	SNA	-	-	0
Non-native vegetation	N/A	0.57	-	0.57
Disturbed Habitat	N/A	39.68	29.70	69.38
Developed	N/A	284.27	24.55	308.82
	Subtotal	***357.84***	***54.38***	***412.22***
	TOTAL	**358.57**	**54.38**	**412.95**

[1] Rarity Ranking from CDFW's Natural Communities List (2022d). State (S) Rarity Ranking: S1 (critically imperiled), S2 (imperiled), S3 (vulnerable), S4 (apparently secure) and S5 (secure).
[2] Acreages rounded to the nearest 0.01 acre; total reflects rounding.
[3] Impacts would occur to non-jurisdictional artificially created wetlands.
[4] SNA = Semi-Natural Alliance. Semi-natural Alliances are strongly dominated by non-native plants that have become naturalized in the state. These alliances are not considered sensitive.

Of the 412.95 acres of direct impacts, 393.92 acres (95 percent) of the impacts would be to disturbed habitat, developed land, and other non-sensitive vegetation communities. Impacts to 393.92 acres of non-sensitive vegetation communities and land uses are **not significant**.

No sensitive habitat occurs within the Joint Treatment Site, therefore there would be **no impact** to sensitive habitats in this area. One sensitive habitat (i.e., those that are ranked as S1 through S3), alluvial fan sage scrub, would be impacted by the backbone pipeline.

A total of 19.03 acres of alluvial fan sage scrub (including disturbed) would be impacted by the backbone pipeline, including 18.92 acres of temporary impacts and 0.11 acre of permanent impacts. Alluvial fan sage scrub would be impacted where the backbone alignment parallels the San Gabriel River Trail north of Huntington Drive (**Figures 5.2-9y** and **5.2-9z**) and within the Santa Fe Dam Spillway (**Figure 5.2-9x**). Both of these areas occur on federal lands owned by the USACE, though LACPW has been granted a license to manage and operate groundwater recharge facilities within the Santa Fe Dam Spillway (and Santa Fe Spreading Grounds to the north). The Santa Fe Dam, and its associated facilities (including the Santa Fe Dam Spillway and Santa Fe Spreading Grounds), is a civil works project with the primary purpose of providing flood risk management to the communities along the San Gabriel River downstream of the Santa Fe Dam. Construction of the Santa Fe Dam was completed in 1949. The segment of the San Gabriel River from the mouth of San Gabriel Canyon south to Santa Fe Dam has been channelized to convey San Gabriel River flows across the alluvial fan and into the Santa Fe Dam Basin. The trapezoidal channel was originally constructed in 1947 and was modified in 1969 to add 10 drop structures. In addition to flood risk management activities, these areas have been further developed for recreation purposes, including the construction of the paved San Gabriel River Trail, which is used by pedestrians and cyclists and serves as an access road to existing facilities by multiple agencies. Additionally, these areas are heavily frequented and utilized by individuals experiencing homelessness. Based on the historic and current uses of these areas, habitat within the direct impact area is subject to a high degree of disturbance, both directly and indirectly.

Though the backbone pipeline would result in direct impacts to alluvial fan sage scrub, additional habitat occurs in the immediate area, including areas east and west of the San Gabriel River Trail and within the Santa Fe Dam Spillway. As such, the backbone pipeline would not result in a substantial decrease of this sensitive natural community within the local area, and undisturbed areas would remain available for occupation by local wildlife, including CAGN. Despite the disturbed nature and limited area of the habitat that would be impacted, project impacts to alluvial fan sage scrub would be considered **significant**.

Construction of the backbone pipeline would occur immediately adjacent to sensitive natural communities. Inadvertent intrusion into these adjacent areas by construction vehicles, equipment, and personnel could result in additional impacts. Implementation of **GM-EC-**1, which involves the provision of environmental awareness training, and **BIO-EC-1,** which includes delineation of impact area and temporary fencing, would help prevent inadvertent intrusion of construction activities into sensitive biological areas. Nonetheless, inadvertent intrusion into sensitive natural communities could occur, and potential impacts would be **significant**.

Operational activities for project-level facilities and components may include, but are not limited to, the following activities: patrolling, inspections, operation of facilities, routine maintenance of facilities to maintain proper function, maintenance of access roads, and maintenance of vegetation within and surrounding above-ground permanent features such as accessways. Operational activities would not expand the footprint, use, or function of the facilities. As such, native habitat, including sensitive natural communities, surrounding these facilities would not be removed as part operational activities where habitat occurs outside established ROWs and developed footprints. Metropolitan would implement standard operational protocols for protection of biological resources during operational activities, such

as flagging of sensitive habitats that occur adjacent to maintenance areas for avoidance. Therefore, potential impacts to sensitive natural communities related to operation activities would be **less than significant**.

5.2.5.3 Topic 3: Wetlands and Jurisdictional Aquatic Resources

Would Pure Water have a substantial effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Jurisdictional aquatic resources addressed in this section include waters of the U.S., including wetlands regulated by the USACE pursuant to Section 404 of the CWA; waters of the state regulated by the Regional Board pursuant to Section 401 of the CWA and Porter-Cologne Water Quality Control Act; and/or streambed and riparian habitat regulated by the CDFW pursuant to Sections 1600 *et seq*. of the FGC.

Program-Level Analysis

Construction

As discussed in Section 5.2.1, potential jurisdictional aquatic resources occur within the Pure Water area, and construction activities for Pure Water have the potential to directly and/or indirectly affect these resources. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited in or adjacent to areas that contain jurisdictional aquatic resources. Once the specific locations of these Pure Water facilities and components are determined, additional, site-specific biological surveys, including jurisdictional delineations, would be conducted and jurisdictional aquatic resources in and adjacent to these locations would be characterized and mapped as applicable. If jurisdictional aquatic resources within those areas cannot be avoided, impacts to affected jurisdictional aquatic resources would be **significant**. Reduction or suspension of imported water flows from service connections PM-26, CENB-48, and USG-3 would not involve construction; therefore, there would be **no impact** to jurisdictional aquatic resources in these areas associated with construction.

Operation

The operation of Pure Water would include discharging purified water into groundwater basins via the Santa Fe Spreading Grounds (including the Santa Fe Dam Spillway), as well as at the San Gabriel Canyon, Rio Hondo, and San Gabriel Coastal spreading grounds; potential new spreading grounds; and existing and potential new injection wells. These discharges would replace some or all of the discharges of imported water at service connections PM-26, CENB-48, and USG-3. These changes and the potential impacts associated with water delivery changes and stream flow conditions on jurisdictional aquatic resources are discussed below. Operation of other Pure Water facilities and components is not expected to impact jurisdictional aquatic resources.

PM-26 (Little Dalton Wash)

The earthen portion of Little Dalton Wash and Little Dalton Spreading Grounds that would receive less water due to the reduction in water deliveries to PM-26 is an approximately 0.6-mile-long reach. Potential jurisdictional aquatic resources in the Discharge Study Area include streambed habitat along Little Dalton Wash and sycamore woodland riparian habitat (**Figure 5.2-5**). Direct impacts are not proposed to occur to these resources as part of implementation of Pure Water. Indirect impacts to these resources are also not anticipated to occur as Little Dalton Wash is an ephemeral drainage that would continue to convey runoff flows from the adjacent hillsides and canyons. The sycamore woodland habitat does not have a high degree of water dependence outside of normal seasonal rainfall for survivorship once roots are established and is likely sustained by groundwater as opposed to surface flows. Therefore, the reduction in water deliveries is not anticipated to result in the loss of existing wetland and/or riparian habitat types and no conversion of existing habitat types is anticipated to occur. Impacts to jurisdictional aquatic resources within this area would be **less than significant**.

CENB-48 (San Dimas Wash)

The earthen-lined portion of San Dimas Wash downstream of CENB-48 was found to support potential jurisdictional aquatic resources (e.g., alluvial fan sage scrub situated in a riverine setting, arundo-dominated riparian, disturbed wetland, and mule fat scrub; **Figure 5.2-6**). Direct impacts are not proposed to occur to these resources as part of implementation of Pure Water. Indirect impacts to these resources are also not anticipated to occur as San Dimas Wash is an ephemeral to intermittent drainage that would continue to convey runoff flows from San Dimas Canyon. Therefore, the overall hydrology of the wash, and the wetland vegetation associated with that hydrology (e.g., mule fat scrub) would not be significantly altered from suspension of releases from CENB-48. Alluvial fan sage scrub habitat generally occurs in association with ephemeral to intermittent streams on well-drained soils. As such, alluvial fan sage scrub habitat within San Dimas Wash would be resilient to changes in the flow regime as this habitat type is adapted to episodic flooding and is not reliant on the presence of surface water for most of the year. Therefore, no loss of existing wetland and/or riparian habitat types or conversion of existing habitat is anticipated to occur. Impacts to jurisdictional aquatic resources within this area would be **less than significant**.

USG-3 (San Gabriel River: Between Morris Dam and the Santa Fe Dam)

Potential jurisdictional aquatic resources along the reach of the San Gabriel River between Morris Dam and Santa Fe Dam include streambed, riparian scrub, riparian forest, and riparian woodland habitat located within and along the river, as well as alluvial fan sage scrub within flatter sections of the canyon bottom in the upper reach and throughout the widened floodplain area in the lower reach (**Figures 5.2-7a** and **5.2-7b**). Direct impacts are not proposed to occur to these resources as part of implementation of Pure Water.

Indirect impacts could occur to jurisdictional wetland and riparian habitats that are more water dependent due to suspension of water deliveries at USG-3, as described in Section 5.2.5.1. These impacts could include stress to vegetation and an increase in non-native species. These potential impacts, if found to occur, would likely have a greater effect on the upper reach of the San Gabriel River where surface flows are near year-round. Potential impacts to wetland and riparian habitats would be **significant** if the changes in the quantity and frequency of water releases at USG-3 were to result in the decline or elimination of water-dependent wetland and riparian habitats.

The lower reach of the San Gabriel River is intermittent and is typically dry during the summer months. Indirect impacts to potentially jurisdictional alluvial fan sage scrub present along the San Gabriel River are not anticipated to occur as this habitat does not have a high degree of water dependence for survivorship, and the reduction in surface water is not anticipated to adversely affect alluvial fan sage scrub or result in habitat conversion. Therefore, impacts to alluvial fan sage scrub as a result of the reduction of water deliveries would be **less than significant**.

Santa Fe Dam Spillway

Santa Fe Dam Spillway is predominantly comprised of alluvial fan sage scrub, though disturbed wetland and mule fat scrub habitat occur at the northern/upstream end where water is released from an existing headwall at the northwestern corner of the spillway (**Figure 5.2-8**). However, the habitats at this location are not considered to be jurisdictional as they occur within artificially constructed wetlands associated with development of the Santa Fe Dam, Santa Fe Spreading Grounds, and Santa Fe Dam Spillway as part of flood control management in the region. Therefore, the reduction of water deliveries to Santa Fe Dam Spillway would have **no impact** to jurisdictional aquatic resources as none are present within the spillway.

Project-Level Analysis

As a regulatory requirement, unavoidable impacts to jurisdictional aquatic resources would require notification and permitting through the appropriate regulatory agencies. Anticipated jurisdictional resource permits include a CWA Section 404 permit from the USACE, CWA Section 401 Water Quality Certification or Porter-Cologne Water Quality Control Act Waste Discharge Requirement permit from the Regional Board, and FGC Section 1602 Streambed Alteration Agreement from CDFW.

No jurisdictional aquatic resources occur at the Joint Treatment Site. Therefore, the following discussion focuses on the potential impacts of the backbone pipeline to jurisdictional aquatic resources.

Construction activities would have a direct impact on jurisdictional aquatic resources, including non-wetland waters of the U.S., non-wetland waters of the state, and CDFW jurisdictional unvegetated streambed. The backbone pipeline would result in a total of 0.01 acre of temporary impacts to non-wetland waters of the U.S. (**Figures 5.2-10a** through **5.2-10d**), 0.02 acre of temporary impacts to non-wetland waters of the state (**Figures 5.2-11a** through **5.2-11e**), and 0.02 acre of temporary impacts to CDFW-jurisdictional aquatic resources comprised of unvegetated stream (**Figures 5.2-12a** through **5.2-12d**) as summarized below in **Table 5.2-10**. All impacts would occur to an unnamed earthen drainage located east of the San Gabriel River Trail, to the north of Huntington Drive, where a storm drain culvert conveys runoff flows to the San Gabriel River (**Figures 5.2-10d, 5.2-11d,** and **5.2-12d**). This drainage feature occurs within existing operational facilities associated with the Santa Fe Dam Basin operations grounds, according to the USACE's Master Plan for the area (USACE 2011) and as such, would be subject to associated operational disturbance and maintenance activities. Impacts to these jurisdictional aquatic resources would consist of grading, trenching, construction of the backbone pipeline, and backfilling of the trench. Although these impacts would be temporary and the areas would be restored to preconstruction conditions, it should be noted that they would revert back to the USACE and continue to be operated and maintained as part of the USACE's Master Plan. Impacts to these resources would be **significant**.

Table 5.2-10
JURISDICTIONAL AQUATIC RESOURCE IMPACTS

Jurisdictional Resource	Impacts to Waters of the U.S. (acres)[1]			Impacts to Waters of the State (acres)[1]			Impacts to CDFW Streambed and Riparian Habitat (acres)[1]		
	Temp	Perm	Total	Temp	Perm	Total	Temp	Perm	Total
San Gabriel River Trail									
Non-wetland Waters	0.01	0	**0.01**	0.02	0	**0.02**	0	0	**0**
Unvegetated Stream	0	0	**0**	0	0	**0**	0.02	0	**0.02**
TOTAL	**0.01**	**0**	**0.01**	**0.02**	**0.00**	**0.02**	**0.02**	**0**	**0.02**

[1] Acres rounded to the nearest hundredth; totals reflect rounding.

Construction would occur adjacent to jurisdictional aquatic resources, which would be avoided by project-level facilities and components. Implementation of **BIO-EC-1,** which includes temporary fencing of construction work areas to prevent inadvertent intrusion of construction activities (vehicles, equipment, and personnel) would prevent intrusion into sensitive biological areas, including jurisdictional aquatic resources. Nonetheless, inadvertent intrusion into these adjacent areas by construction vehicles, equipment, and personnel could result in additional impacts which would be considered **significant**.

Potential indirect impacts on jurisdictional aquatic resources adjacent to construction work areas would be prevented during construction through the successful implementation of standard BMPs as part of the SWPPPs prepared for the backbone pipeline reaches, in accordance with **HYD-EC-1**. Specific BMPs may include but would not necessarily be limited to the following: maintaining the work areas free of trash and debris; employing appropriate standard spill prevention practices and clean-up materials; installing and maintaining sediment and erosion control measures; maintaining effective control of fugitive dust; and properly storing, handling, and disposing of toxins and pollutants, including waste materials.

Operational activities for project-level facilities and components may include, but are not limited to, the following activities: patrolling, inspections, operation of facilities, routine maintenance of facilities to maintain proper function, maintenance of access roads, dewatering, and maintenance of vegetation within and surrounding above-ground permanent features such as accessways. Operational activities would not expand the footprint, use, or function of the facilities. As such, jurisdictional aquatic resources adjacent to these facilities would not be impacted as part of operational activities. Metropolitan would comply with applicable requirements of the federal CWA, Porter-Cologne Water Quality Control Act, National Pollutant Discharge Elimination System (NPDES), associated implementing regulations of the SWRCB and Regional Board, and related state and local standards, as applicable. In addition, where applicable, Metropolitan's standard operational protocols for protection of biological resources would be implemented during operational activities, such as implementation of standard BMPs to minimize, control, and treat storm water runoff, fugitive dust, and other pollutants. Therefore, potential impacts to jurisdictional aquatic resources related to operational activities would be **less than significant**.

5.2.5.4 Topic 4: Wildlife Movement

Would Pure Water 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?

Program-Level Analysis

Construction and Operation

The Pure Water area is located in the Los Angeles Basin which represents a densely urbanized and populated region. As described in Section 5.2.1.4, wildlife linkages and movement corridors within the area are disturbed, constrained, and fragmented by existing development, transportation corridors (e.g., I-605, I-210, I-5, I-10), and maintenance and operation of flood control facilities along major rivers and drainages within the region (e.g., San Gabriel River, Los Angeles River, San Jose Creek). Wildlife movement within the region occurs within larger blocks of preserved habitat (e.g., Whittier Narrows Recreation/Natural Area, Santa Fe Dam Recreation Area, and San Gabriel Mountains/Angeles National Forest) and various canyons and water courses. Large portions of these areas also represent lands designated as County SEA, which are discussed in more detail in Section 5.2.5.5. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited within or adjacent to wildlife movement areas and/or nursery sites. However, these program-level facilities and components would be placed in relation to existing and planned (i.e., the backbone pipeline) infrastructure and other disturbed and developed areas and, as such, would not introduce new uses or substantially prevent or further restrain wildlife movement in these areas. In addition, applicable ECs would be implemented during construction and operation of all program-level facilities and components to avoid or minimize potential impacts to wildlife corridors and linkages that may be present in the area and associated wildlife movement, including shielding of artificial nighttime lighting away from native habitat areas (**BIO-EC-3**) to prevent disturbance to wildlife that may be inhabiting or moving through these areas. As such, it is unlikely that these new facilities and components would be constructed or operated within existing wildlife movement corridors or nursery sites, and impacts would be **less than significant**.

Project-Level Analysis

The project-level facilities and components would be located within developed and densely urbanized areas and would primarily occur within existing road ROWs, existing flood control and utility easements (i.e., LACPW and SCE), active urban nurseries, and developed neighborhoods that do not functionally contribute to local or regional wildlife linkages and corridors. The central and extreme northern portions of the BSA are located within the Puente Hills SEA and San Gabriel Canyon SEA, respectively, which contain native habitats that support common and special-status wildlife species and provide habitat linkages to other biological resource areas within the region, though these linkages are constrained by existing transportation corridors, multiple local roadway crossings, and dense development, as described in Section 5.2.1.4. Construction of the backbone pipeline would not result in direct impacts to the Puente Hills SEA or San Gabriel Canyon SEA, as detailed below in Section 5.2.5.5. Construction of Pure Water may temporarily disrupt local wildlife present in these areas as temporary increases in noise levels or human presence during active construction periods could temporarily displace wildlife into

unobstructed habitat farther away from active work areas, but wildlife would be expected to move back into the area once construction activities have ceased. Furthermore, the project-level facilities and components would avoid direct impacts to the San Gabriel River, San Jose Creek, and other riparian areas that provide higher quality live-in habitat for local wildlife and facilitate wildlife movement in the surrounding area. These corridors would not be impacted by Pure Water and would remain available for wildlife use during and after project construction. Wildlife would be expected to move unimpeded into these areas and around construction work areas during project construction. Additionally, vegetation removal and construction would occur outside of the general avian breeding season to the extent feasible, in accordance with **BIO-EC-2**, which would further minimize impacts to wildlife by maintaining habitat during the breeding season in areas outside of SEA. Therefore, the project-level facilities and components would not further constrain identified habitat linkages.

Although the majority of the project-level facilities and components are underground utilities, these facilities and components do include above-ground facilities including buildings and structures at the Joint Treatment Site, as well as other facilities along the backbone pipeline including access roads and ancillary facilities. However, these facilities would not act as major impediments to wildlife movement, including access to nursery sites, foraging habitat, breeding habitat, water sources, or other areas necessary for their life history as these facilities would be sited in currently developed areas, or in areas where other infrastructure is already present (e.g., SCE easements, LACPW facilities, USACE-managed flood control areas). Identified habitat linkages and important biological resources within and adjacent to the backbone alignment are generally contained within the Whittier Narrows Recreation/Natural Area, Santa Fe Dam Recreation Area, and portions of the San Gabriel River which contain suitable habitat and other resources that provide live-in habitat and stepping-stone linkages for wildlife within the local area, particularly species adapted to urban development. The project-level facilities and components would avoid and be set back from these areas, with the closest elements being the backbone pipeline (which would be undergrounded), associated appurtenances, and access roads that would be constructed within existing utility easements and along the heavily traveled San Gabriel River Trail. Project-level facilities and components are anticipated to use existing maintenance access roads where they occur. New access road construction would be limited to spur roads from existing access roads to appurtenant facilities and other permanent infrastructure. Traffic along these access roads would be minimal, and the roads would be used to complete maintenance and repair activities and for periodic patrolling. As such, the potential impact on wildlife movement and nursery sites from Pure Water construction and operation would be **less than significant**.

5.2.5.5 Topic 5: Local Policies

Would Pure Water conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Program-Level Analysis

Construction and Operation

County of Los Angeles SEA Program

Several SEA occur within and adjacent to the Pure Water area including those that are located within incorporated cities and unincorporated areas of the County; however, the County's SEA Ordinance only applies to unincorporated County areas. Per Section 53091(d) of the California Government Code, building ordinances of a county or city shall not apply to the location or construction of facilities for the

production, generation, storage, treatment or transmission of water or wastewater. Section (e) of the code states that zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water. As such, Metropolitan is not subject to the County's SEA Ordinance; however, potential impacts to biological resources present within SEA are nonetheless considered.

Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis*. Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited within or adjacent to lands designated as SEA. Certain uses are considered compatible with the SEA Program including essential public and semi-public uses that are necessary for health, safety, and welfare, and that cannot be relocated to alternative sites. Pure Water is an essential public project that encompasses the construction and operation of essential public infrastructure that would provide reliable water to the region. Pure Water conforms to the necessary findings to be compatible with the SEA Ordinance as it would not interfere with the preservation of natural open space areas; would prioritize locating Pure Water facilities and components in the least sensitive locations, thereby minimizing and avoiding impacts to natural vegetation communities, special-status plant and animal species, and aquatic resources; would not result in habitat fragmentation or interfere with migratory pathways or wildlife connectivity/corridors; and would ensure that access roads, utilities, and facilities do not conflict with Priority Biological Resources, habitat areas, or migratory paths. Therefore, potential impacts to SEA due to Pure Water construction or operation would be **less than significant**.

Tree Preservation/Protection Ordinances and Policies

Construction activities for Pure Water, specifically activities that involve clearing and trimming of vegetation, have the potential to impact protected/heritage trees, as determined by the County or local jurisdiction. Impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis*. Because the exact locations of other Pure Water components are unknown at this stage of program design and therefore analyzed at the program level, there is potential for these facilities and components to be sited within areas that may contain protected/heritage trees. Implementation of **BIO-EC-5** would ensure compliance with local tree preservation/protection policies and ordinances through the completion of pre-construction surveys to identify the location of protected/heritage trees prior to construction of program-level facilities and components and adherence to applicable tree trimming and removal requirements and procedures. As such, potential impacts to protected/heritage trees, as determined by the local jurisdiction, would be **less than significant**.

Project-Level Analysis

County of Los Angeles SEA Program

Two portions of the project-level facilities and components are located within SEA: the San Gabriel Canyon SEA and the Puente Hills SEA. The northern portion of the backbone alignment, from the Santa Fe Dam area north along the San Gabriel River and into the foothills of the San Gabriel Mountains, is located within the San Gabriel Canyon SEA. However, since this portion of the SEA is within incorporated cities, the County's SEA Ordinance does not apply in this area.

The central portion of the backbone alignment that crosses San Jose Creek, just upstream of where it merges with the San Gabriel River, is located within the Puente Hills SEA and occurs within unincorporated areas of the County. As such, the County's SEA Ordinance does apply in this area. However, no impacts would occur within the Puente Hills SEA. The backbone pipeline would be constructed to the east of the San Gabriel River within existing public and utility easements associated with LACPW and SCE, which are located outside of the Puente Hills SEA. Portions of the backbone pipeline located adjacent to but outside of the Puente Hills SEA that would result in direct ground disturbance during project construction are located within existing developed or disturbed areas and would not affect natural vegetation communities; result in habitat fragmentation or interfere with migratory pathways or wildlife connectivity/corridors; adversely affect special-status plant or animal species, imperiled natural communities, or other Priority Biological Resources; or alter the ecological or hydrological function of water bodies. The portion of the backbone pipeline that would cross San Jose Creek, and is located within the Puente Hills SEA, would be installed through trenchless construction methods and would not result in direct impacts to natural vegetation communities or aquatic resources present within the area. Furthermore, Pure Water is an essential public project that cannot be relocated to an alternative site. Thus, Pure Water conforms to the necessary findings to be compatible with the SEA Ordinance, and **no impact** to SEA would occur through the construction or operation of the backbone alignment as no aboveground project-level facilities and components would be placed within a SEA.

Tree Preservation/Protection Ordinances and Policies

The BSA contains trees that may be subject to tree preservation/protection ordinances and policies within the County and various cities where the backbone alignment is located. Temporary construction impacts associated with project-level facilities and components to protected and/or heritage trees could occur as a result of vegetation trimming, vegetation/tree removal, or trenching within the root zone of protected/heritage trees. Additionally, impacts associated with operation of project-level facilities and components could occur through the maintenance of vegetation surrounding project facilities, including trimming protected/heritage trees, or removal of protected/heritage trees that are determined to be undermining these facilities. Implementation of **BIO-EC-5** would ensure compliance with local tree preservation/protection policies and ordinances through adherence to applicable tree trimming and removal requirements and procedures. As such, potential impacts to protected/heritage trees, as determined by the local jurisdiction, would be **less than significant**.

5.2.5.6 Topic 6: Conservation Planning

Would Pure Water conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no applicable Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) within the Pure Water area, and Metropolitan is not a participating entity in any HCPs/NCCPs in the area. As such, construction and operation of Pure Water would not impact or conflict with the provisions of any regional or local HCPs or NCCP and **no impact** would occur.

5.2.6 Level of Significance Before Mitigation

Pure Water has the potential to cause **significant** impacts to special-status plant and animal species; sensitive natural communities; and jurisdictional aquatic resources as defined by the USACE, Regional

Board, and CDFW. Pure Water would result in **less-than-significant** impacts or **no impacts** to wildlife corridors, linkages, and movement; local policies and ordinances; and HCPs or NCCPs.

5.2.7 Mitigation Measures

Changes in Water Deliveries

BIO-MM-1 **Riparian Vegetation Monitoring Plan and Water Deliveries Mitigation**. Metropolitan shall prepare a Riparian Vegetation Monitoring Plan for the reach of the San Gabriel River, between USG-3 and Santa Fe Dam, to monitor potential changes to wetland and riparian communities in response to the suspension of water deliveries at USG-3. If the water delivery changes are determined to have resulted in adverse impacts and loss of wetland and riparian habitat along the monitored reach during the monitoring period, additional measures shall be implemented to ensure no net loss of wetland and riparian habitat occurs within the monitoring reach as a result of Pure Water operations.

Metropolitan shall prepare and implement a Riparian Vegetation Monitoring Plan for the reach of the San Gabriel River between Metropolitan service connection USG-3 and Santa Fe Dam to monitor potential changes to wetland and riparian communities in response to the suspension of water deliveries at USG-3. The monitoring shall also include potential changes to such habitat potentially serving as breeding habitat for the federally and state endangered least Bell's vireo and southwestern willow flycatcher; potential adverse modification of critical habitat for the southwestern willow flycatcher; and potential impacts to habitat for other special-status species, as applicable. The plan shall identify the purpose of the monitoring, monitoring period, monitoring protocols, thresholds for determining if the suspension of water deliveries has resulted in an adverse impact to wetland and riparian habitats within the monitoring area, reporting requirements, and subsequent actions to be taken to ensure that no net loss of wetland or riparian habitat occurs within the monitoring reach as a result of Pure Water operations.

If, through implementation of the Riparian Vegetation Monitoring Plan, a significant adverse impact on wetland and/or riparian habitat; breeding habitat for the least Bell's vireo and/or southwestern willow flycatcher; critical habitat for southwestern willow flycatcher; and/or habitat for other special-status species is identified, then Metropolitan shall consult with the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW), as applicable, to address potential adverse impacts on special-status species and/or adverse modification of critical habitat. Metropolitan shall implement requirements determined through the consultation process, which could include adjusting surface flows, as appropriate, and/or compensation at a minimum 1:1 ratio to ensure no net loss or degradation of wetland and/or riparian habitat, breeding habitat for the least Bell's vireo and/or southwestern willow flycatcher, and/or southwestern willow flycatcher critical habitat. This could occur through one or more of the following: onsite and/or offsite establishment, re-establishment, rehabilitation, and/or enhancement; acquisition and preservation of onsite and/or offsite land demonstrated to support the habitat; and/or purchase of mitigation credits at an approved mitigation bank.

Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Special-Status Plants

BIO-MM-2 **Updated Rare Plant Surveys.** *A qualified biologist shall conduct updated focused rare plant surveys no more than two years prior to construction activities in direct impact area(s) with suitable habitat.*

Updated focused rare plant surveys shall be conducted by a qualified biologist prior to the commencement of construction and during the appropriate season(s) to identify the presence or absence of special-status plant species, including locations and numbers, within the direct impact area(s) scheduled for construction within two years. The surveys shall cover all special-status plant species with potential to occur within the direct impact area(s) and shall target, at a minimum, the following special-status plant species found to be absent from the direct impact area(s) during baseline biological surveys but with a high potential to occur in the future given the presence of suitable habitat: Nevin's barberry (federally and state listed endangered, California Rare Plant Rank 1B.1); Parish's gooseberry (non-listed, California Rare Plant Rank 1A), and Sonoran maiden fern (non-listed, California Rare Plant Rank 2B.2). The results of the surveys shall be summarized in a rare plant survey report to be submitted to Metropolitan. If, after the completion of the updated rare plant surveys, it is determined that unavoidable impacts to Nevin's barberry and/or other federally and/or state listed plant species would occur as a result of project implementation, then Metropolitan shall implement mitigation measure BIO-MM-3. If it is confirmed that unavoidable impacts to Parish's gooseberry, Sonoran maiden fern, and/or other non-listed, special-status plant species with a California Native Plant Society California Rare Plant Rank of 1 or 2 could occur, then Metropolitan shall implement mitigation measure BIO-MM-4.

BIO-MM-3 **Nevin's Barberry Avoidance, Agency Consultation, and Compensatory Mitigation.** *If Nevin's Barberry or other federally and/or state listed plant species are identified within the direct impact area(s) and cannot be avoided, Metropolitan shall consult with USFWS and/or CDFW in accordance with the federal and state Endangered Species Acts.*

If confirmed present within the direct impact area(s) through the implementation of mitigation measure BIO-MM-2, the locations of Nevin's barberry and other federally and/or state listed plant species shall first be avoided where feasible during final project design based on engineering and constructability considerations. Where avoidance is not feasible, Metropolitan shall consult with the USFWS and/or CDFW, as applicable, to obtain the appropriate approvals and permits authorizing impacts and "take" of the species. Metropolitan or the appropriate federal lead agency for the project shall consult with the USFWS for impacts on federally listed species in accordance with Section 7 or Section 10 of the federal Endangered Species Act and with the CDFW for impacts on state listed species in accordance with Section 2080.1 or Section 2081 of the California Endangered Species Act, as applicable. Impacts on federally and/or state listed plants shall be mitigated either through salvage and translocation onto suitable onsite

and/or offsite receptor locations as approved in consultation with the USFWS and/or CDFW, or through offsite preservation of habitat demonstrated to support the species, unless otherwise determined in consultation with the USFWS and/or CDFW. If salvage and translocation are required, a qualified biologist shall prepare a Mitigation Plan that identifies, at a minimum, the goals of the mitigation, responsible parties, timing of mitigation, methods of mitigation implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. Mitigation would include, at a minimum, 1:1 replacement of impacted individuals to ensure no net loss. The Mitigation Plan would be submitted to and approved by the USFWS and/or CDFW, as applicable, prior to the initiation of construction for those facilities and components of the project with impacts on the species. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

BIO-MM-4 **Parish's Gooseberry and Sonoran Maiden Fern Avoidance and Compensatory Mitigation.** *If Parish's Gooseberry, Sonoran Maiden Fern, or other non-listed California Rare Plant Rank 1 and 2 species are identified within the direct impact area(s) and cannot be avoided, Metropolitan shall mitigate impacts.*

If confirmed present within the direct impact area(s) through the implementation of mitigation measure BIO-MM-2, the locations of Parish's gooseberry, Sonoran maiden fern, and other non-listed California Rare Plant Rank 1 and 2 plant species shall first be avoided where feasible during final project design based on engineering and constructability considerations. Where avoidance is not feasible, Metropolitan shall mitigate the impacts either through salvage and translocation within suitable onsite and/or offsite receptor locations, onsite revegetation (i.e., planting and seeding with locally sourced plant material), or offsite preservation of habitat demonstrated to support the species. If salvage and translocation and/or onsite revegetation is required, a qualified biologist shall prepare a Mitigation Plan for the applicable pipeline reach that identifies, at a minimum, the goals of the mitigation, responsible parties, timing of mitigation, methods of mitigation implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. The minimum mitigation ratio would include 1:1 replacement of impacted individuals to ensure no net loss. The Mitigation Plan shall be submitted to and approved by Metropolitan prior to the initiation of construction for those facilities and components of the project with impacts on the species.

Coastal California Gnatcatcher

BIO-MM-5 **Updated Coastal California Gnatcatcher Surveys**. *A qualified biologist shall conduct updated protocol-level surveys for coastal California gnatcatcher no more than two years prior to construction activities where suitable habitat occurs within or adjacent to direct impact area(s).*

A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) shall conduct updated protocol-level surveys for coastal California

gnatcatcher no more than two years prior to the commencement of construction activities to determine the presence/absence of coastal California gnatcatcher. The surveys shall be conducted in accordance with the current USFWS survey protocol within the direct impact area(s), in areas supporting contiguous suitable habitat that occurs within 500 feet of direct impact area(s) (i.e., within suitable habitat that is not separated from direct impact area[s] by existing developments), and where construction is scheduled to occur within two years. In order to inform the quantification of habitat determined to be occupied by nesting/breeding coastal California gnatcatchers, the surveys shall include mapping the location and estimated extent of any coastal California gnatcatcher nests and associated breeding territories found to overlap the direct impact area(s) and contiguous suitable habitat that occurs within 500 feet of direct impact area(s). The results of the survey shall be summarized in a survey report and submitted to the USFWS within 45 days of completion of the surveys pursuant to survey protocol.

If coastal California gnatcatchers are found to occur in the direct impact area(s) or within contiguous suitable habitat that occurs within 500 feet of the direct impact area(s), Metropolitan shall implement the avoidance and minimization measures described in mitigation measure BIO-MM-6 to prevent potential indirect and adverse impacts to nesting/breeding individuals.

BIO-MM-6 **Coastal California Gnatcatcher Avoidance and Agency Consultation.** *If coastal California gnatcatcher occurs in or within 500 feet of direct impact area(s), Metropolitan shall implement measures to avoid or minimize impacts and, if necessary, consult with the USFWS.*

If, during the updated protocol-level surveys conducted in accordance with BIO-MM-5, coastal California gnatcatcher is found to be nesting/breeding within direct impact area(s), then the following measures shall be implemented:

a. Prior to initiation of direct impacts to habitat occupied by nesting/breeding coastal California gnatcatcher, Metropolitan or the project's federal lead agency shall consult with the USFWS in accordance with Section 7 or Section 10 of the federal Endangered Species Act to obtain take coverage for unavoidable impacts. All Terms and Conditions and Conservation Measures prescribed by the USFWS as part of the consultation process shall be adhered to, which shall include at a minimum and, unless otherwise directed by the USFWS, the following avoidance and minimization measures:

    i. Removal (i.e., vegetation clearing, crushing, trimming) of coastal California gnatcatcher habitat shall be avoided during the coastal California gnatcatcher breeding season (February 15 through August 31) to the extent feasible;

    ii. If removal of coastal California gnatcatcher habitat must occur during the coastal California gnatcatcher breeding season, Metropolitan shall retain a qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) to conduct pre-construction surveys for the coastal California gnatcatcher to determine whether nesting/breeding coastal

California gnatcatchers are currently present within the direct impact area(s). Pre-construction surveys shall include a minimum of three surveys, conducted on separate days, beginning no earlier than seven days prior to commencement of construction activities, with the last survey being conducted within 24 hours prior to initiation of work. If coastal California gnatcatchers are not detected during the pre-construction surveys, construction activities shall be allowed to proceed with no additional measures required, so long as the activities are ongoing and do not stop for more than seven days during the coastal California gnatcatcher breeding season. If construction activities stop for more than seven days during the coastal California gnatcatcher breeding season, Metropolitan shall repeat the pre-construction surveys to confirm the continued absence of nesting/breeding coastal California gnatcatchers;

iii. If nesting/breeding coastal California gnatcatchers are found to be present during the pre-construction surveys, the qualified biologist shall record the number of individuals, map the location of coastal California gnatcatcher nests observed, estimate the extent of occupied habitat being used as part of breeding territories, and report these numbers and locations to the USFWS. In consultation with the USFWS, the qualified biologist shall establish an avoidance buffer around the nests. The qualified biologist shall monitor the status of the nests, confirm the extent of occupied habitat being used as part of breeding territories, and adjust the avoidance buffer if necessary. No construction activities shall occur within the avoidance buffer until the qualified biologist has determined that nesting activities have ceased (i.e., nestlings have fledged, or the nest is no longer active), or until after August 31; and

iv. Metropolitan shall compensate direct impacts to habitat that is found to be occupied by nesting/breeding coastal California gnatcatchers during pre-construction surveys (as described in mitigation measure BIO-MM-5 and potentially updated during monitoring) through implementation of mitigation measure BIO-MM-7 below.

If, during the updated protocol-level surveys conducted in accordance with BIO-MM-5, coastal California gnatcatcher is found to be nesting/breeding *outside of* direct impact area(s) but within contiguous habitat that occurs within 500 feet of direct impact areas(s) (i.e., within suitable habitat that is not separated from direct impact area(s) by existing developments), then the following measures shall be implemented:

b. Prior to initiation of construction activities with the potential to generate noise in excess of 60 A-weighted decibels (dBA) as measured from the location of any coastal California gnatcatcher nests, Metropolitan shall implement the following avoidance and minimization measures to prevent potential indirect and adverse impacts to nesting/breeding individuals:

   i. Construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any coastal California gnatcatcher

nests shall not be initiated during the coastal California gnatcatcher breeding season (February 15 through August 31) to the extent feasible;

ii. If construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any coastal California gnatcatcher nests must be initiated during the coastal California gnatcatcher breeding season, Metropolitan shall retain a qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) to conduct pre-construction surveys to determine whether nesting/breeding coastal California gnatcatchers are currently present within contiguous habitat that occurs within 500 feet of the direct work area(s). Pre-construction surveys shall include a minimum of three surveys, conducted on separate days, beginning no earlier than seven days prior to commencement of construction activities, with the last survey being conducted within 24 hours prior to initiation of work. If coastal California gnatcatchers are not detected during the pre-construction surveys, construction activities shall be allowed to proceed with no additional measures required, so long as the activities are ongoing and do not stop for more than seven days during the coastal California gnatcatcher breeding season. If construction activities stop for more than seven days during the coastal California gnatcatcher breeding season, Metropolitan shall repeat the pre-construction surveys to confirm the continued absence of nesting/breeding coastal California gnatcatchers;

iii. If nesting/breeding coastal California gnatcatchers are found to be present during the pre-construction surveys, Metropolitan shall conduct noise monitoring to ensure that construction noise does not exceed 60 dBA as measured from the location of active nests. If necessary, noise attenuation measures (i.e., noise walls, sound blankets, etc.) shall be implemented and/or construction activities shall be adjusted to ensure that no indirect and adverse impacts to nesting/breeding coastal California gnatcatchers occur. As determined by the qualified biologist, if at any time noise cannot be attenuated or construction activities cannot be adjusted to maintain 60 dBA or less as measured from the location of active nests, the construction activities shall be temporarily halted at the nest locations and an avoidance buffer shall be established by the qualified biologist around the nests until the qualified biologist has determined that nesting activities have ceased (i.e., nestlings have fledged, or the nest is no longer active), or until after August 31; and

iv. Indirect and adverse impacts to nesting/breeding coastal California gnatcatchers with the potential to result in take of individuals are not authorized and would require consultation with the USFWS in accordance with BIO-MM-6a above, as applicable. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

BIO-MM-7 **Compensatory Mitigation for Coastal California Gnatcatcher Habitat.** Direct impacts to occupied coastal California gnatcatcher habitat shall be mitigated in consultation with USFWS in accordance with the federal Endangered Species Act.

Direct impacts to occupied coastal California gnatcatcher habitat shall be mitigated at a minimum 1:1 ratio for temporary impacts and a minimum 2:1 ratio for permanent impacts. Mitigation may occur through one or more of the following: onsite and/or offsite habitat creation, restoration, and/or enhancement; acquisition and preservation of onsite and/or offsite lands demonstrated to be occupied by the species; and/or purchase of mitigation credits at an approved mitigation bank. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Least Bell's Vireo

BIO-MM-8 **Updated Least Bell's Vireo Surveys**. *A qualified biologist shall conduct updated protocol-level surveys for least Bell's vireo no more than two years prior to construction activities where suitable habitat occurs adjacent to direct impact area(s)*.

A qualified biologist shall conduct updated protocol-level surveys for least Bell's vireo no more than two years prior to the commencement of construction activities to determine the presence/absence of least Bell's vireo where suitable habitat occurs adjacent to the direct impact area(s). The surveys shall be conducted in accordance with the current USFWS survey protocol in areas supporting contiguous suitable habitat that occurs within 500 feet of direct impact area(s) (i.e., within suitable habitat that is not separated from direct impact area[s] by existing developments) and where construction is scheduled to occur within two years. The results of the survey shall be summarized in a survey report and submitted to the USFWS within 45 days of completion of the surveys pursuant to survey protocol.

If least Bell's vireos are found within contiguous suitable habitat that occurs within 500 feet of direct impact area(s), Metropolitan shall implement the avoidance and minimization measures described in mitigation measure BIO-MM-9 to prevent potential indirect and adverse impacts to nesting/breeding individuals.

BIO-MM-9 **Least Bell's Vireo Avoidance.** *If least Bell's vireo occurs within 500 feet of direct impact area(s), Metropolitan shall implement measures to avoid or minimize impacts*.

If, during the updated protocol-level surveys, least Bell's vireo is found to be nesting/breeding within contiguous habitat that occurs within 500 feet of direct impact area(s) (i.e., within suitable habitat that is not separated from direct impact area[s] by existing developments), then the following measures shall be implemented:

a. Prior to initiation of construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any least Bell's vireo nests, Metropolitan shall implement the following avoidance and minimization measures to prevent potential indirect and adverse impacts to nesting/breeding individuals:

i. Construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any least Bell's vireo nests shall not be initiated during the least Bell's vireo breeding season (March 15 through September 15) to the extent feasible;

ii. If construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any least Bell's vireo nests must be initiated during the least Bell's vireo breeding season, a qualified biologist shall conduct pre-construction surveys for least Bell's vireo to determine whether nesting/breeding least Bell's vireo are currently present within contiguous habitat that occurs within 500 feet of the direct work areas. Pre-construction surveys shall include a minimum of three surveys, conducted on separate days, beginning no earlier than seven days prior to commencement of construction activities with the last survey being conducted the day immediately prior to initiation of work. If least Bell's vireos are not detected during the pre-construction surveys, construction activities shall be allowed to proceed with no additional measures required, so long as the activities are ongoing and do not stop for more than seven days during the least Bell's vireo breeding season. If construction activities stop for more than seven days during the least Bell's vireo breeding season, Metropolitan shall repeat the pre-construction surveys to confirm the continued absence of nesting/breeding least Bell's vireos;

iii. If nesting/breeding least Bell's vireos are found to be present during the pre-construction surveys, Metropolitan shall conduct noise monitoring to ensure that construction noise does not exceed 60 dBA as measured from the location of active nests. If necessary, noise attenuation measures (i.e., noise walls, sound blankets, etc.) shall be implemented and/or construction activities shall be adjusted to ensure that no indirect and adverse impacts to nesting/breeding least Bell's vireos occur. As determined by a qualified biologist, if at any time noise cannot be attenuated or construction activities cannot be adjusted to maintain 60 dBA or less as measured from the location of active nests, the construction activities shall be temporarily halted at the nest locations and an avoidance buffer shall be established by the qualified biologist around the nests until the qualified biologist has determined that nesting activities have ceased (i.e., nestlings have fledged, or the nest is no longer active), or until after September 15; and

iv. Indirect and adverse impacts to nesting/breeding least Bell's vireos with the potential to result in take of individuals are not authorized and would require consultation with the USFWS in accordance with Section 7 or Section 10 of the federal Endangered Species Act to obtain take coverage for unavoidable impacts. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Southwestern Willow Flycatcher

BIO-MM-10 **Updated Southwestern Willow Flycatcher Surveys**. *A qualified biologist shall conduct updated protocol-level surveys for southwestern willow flycatcher no more than two years prior to construction activities where suitable habitat occurs adjacent to direct impact area(s)*.

A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) shall conduct updated protocol-level surveys for southwestern willow flycatcher no more than two years prior to the commencement of construction activities to determine the presence/absence of southwestern willow flycatcher where suitable habitat occurs adjacent to direct impact area(s). The surveys shall be conducted in accordance with the current USFWS survey protocol in areas supporting contiguous suitable habitat that occurs within 500 feet of direct impact area(s) (i.e., within suitable habitat that is not separated from direct impact area[s] by existing developments) and where construction is scheduled to occur within two years. The results of the survey shall be summarized in a survey report and submitted to the USFWS within 45 days of completion of the surveys pursuant to survey protocol.

If southwestern willow flycatchers are found within contiguous suitable habitat that occurs within 500 feet of direct impact area(s), Metropolitan shall implement the avoidance and minimization measures described in mitigation measure BIO-MM-11 to prevent potential indirect and adverse impacts to nesting/breeding individuals.

BIO-MM-11 **Southwestern Willow Flycatcher Avoidance.** *If southwestern willow flycatcher occurs within 500 feet of direct impact area(s), Metropolitan shall implement measures to avoid or minimize impacts*.

If, during the updated protocol-level surveys, southwestern willow flycatcher is found to be nesting/breeding within contiguous habitat that occurs within 500 feet of direct impact area(s) (i.e., within suitable habitat that is not separated from direct impact area[s] by existing developments), then the following measures shall be implemented:

a. Prior to the initiation of construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any southwestern willow flycatcher nests, Metropolitan shall implement the following avoidance and minimization measures to prevent potential indirect and adverse impacts to nesting/breeding individuals:

    i. Construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any southwestern willow flycatcher nests shall not be initiated during the southwestern willow flycatcher breeding season (May 1 to September 1) to the extent feasible;

    ii. If construction activities with the potential to generate noise in excess of 60 dBA as measured from the location of any southwestern willow flycatcher nests must be initiated during the southwestern willow flycatcher breeding season, a qualified biologist shall conduct pre-construction surveys for southwestern willow flycatcher to determine whether nesting/breeding

southwestern willow flycatchers are currently present within contiguous habitat that occurs within 500 feet of the direct work areas. Pre-construction surveys shall include a minimum of three surveys, conducted on separate days, beginning no earlier than seven days prior to commencement of construction activities with the last survey being conducted within 24 hours prior to initiation of work. If southwestern willow flycatchers are not detected during the pre-construction surveys, construction activities shall be allowed to proceed with no additional measures required, so long as the activities are ongoing and do not stop for more than seven days during the southwestern willow flycatcher breeding season. If construction activities stop for more than seven days during the southwestern willow flycatcher breeding season, Metropolitan shall repeat the pre-construction surveys to confirm the continued absence of nesting/breeding southwestern willow flycatchers;

iii. If nesting/breeding southwestern willow flycatchers are found to be present during the pre-construction surveys, Metropolitan shall conduct noise monitoring to ensure that construction noise does not exceed 60 dBA as measured from the location of active nests. If necessary, noise attenuation measures (i.e., noise walls, sound blankets, etc.) shall be implemented and/or construction activities shall be adjusted to ensure that no indirect and adverse impacts to nesting/breeding southwestern willow flycatchers occur. As determined by the qualified biologist, if at any time noise cannot be attenuated or construction activities cannot be adjusted to maintain 60 dBA or less as measured from the location of active nests, the construction activities shall be temporarily halted at the nest locations and an avoidance buffer shall be established by the qualified biologist around the nests until the qualified biologist has determined that nesting activities have ceased (i.e., nestlings have fledged, or the nest is no longer active), or until after September 1; and

iv. Indirect and adverse impacts to nesting/breeding southwestern willow flycatchers with the potential to result in take of individuals are not authorized and would require consultation with the USFWS in accordance with Section 7 or Section 10 of the federal Endangered Species Act to obtain take coverage for unavoidable impacts. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Burrowing Owl

BIO-MM-12 **Updated Burrowing Owl Surveys**. *A qualified biologist shall conduct updated protocol-level surveys for burrowing owl the year prior to construction activities where suitable habitat occurs within or adjacent to the direct impact area(s)*.

A qualified biologist shall conduct protocol-level surveys for burrowing owl the year prior to the commencement of construction activities to determine the

presence/absence of burrowing owl within or adjacent to direct impact area(s). The surveys shall be conducted in accordance with current guidelines detailed in the CDFW's 2012 Staff Report on Burrowing Owl Mitigation, or subsequently adopted guidelines, for suitable burrowing owl habitat that occurs within the direct impact area(s) and areas within 500 feet that are contiguous with the direct impact area(s) (i.e., the areas are not separated from the direct impact area[s] by developed lands or other habitat that is not suitable for burrowing owl) where construction is scheduled to occur within one year and where an adverse direct indirect impact could occur to the species as a result construction activities, as determined by the qualified biologist. The results of the survey shall be summarized in a survey report and submitted to Metropolitan prior to the initiation of construction.

BIO-MM-13 **Burrowing Owl Avoidance and Agency Consultation**: If active burrowing owl burrows are found to occur in or within 500 feet of direct impact area(s), Metropolitan shall consult with CDFW and implement measures to avoid or minimize impacts.

If, during updated protocol-level surveys, burrowing owl and/or occupied burrowing owl burrows are found to occur within 500 feet of direct impact area(s) (i.e., within suitable habitat not separated from direct impact area[s] by existing developments), then the following measures shall be implemented unless otherwise superseded by updated burrowing owl guidelines adopted by CDFW or measures contained in an incidental take permit (ITP) issued by CDFW:

a. Prior to construction, Metropolitan shall retain a qualified biologist to conduct pre-construction surveys for burrowing owl in suitable burrowing owl habitat that occurs within the direct impact area(s) and areas within 500 feet that are contiguous with the direct impact areas (i.e., the areas are not separated from the direct impact area[s] by developed lands or other habitat that is not suitable for burrowing owl) where an adverse direct or indirect impact could occur to the species as a result of construction activities, as determined by the qualified biologist. The pre-construction surveys shall include at least two surveys conducted at least seven days apart, with the first survey occurring no more than 14 days prior to initiating construction activities that might result in a direct or indirect impact to burrowing owl and the second survey occurring no more than 48 hours prior to initiating construction activities that might result in a direct or indirect impact to burrowing owl. The surveys shall be conducted using the methods described in the 2012 CDFW Staff Report on Burrowing Owl Mitigation or subsequently adopted guidelines. If no burrowing owls or occupied burrows are detected during the pre-construction surveys, construction activities shall be allowed to proceed with no additional measures required. If burrowing owls and/or occupied burrowing owl burrows are detected during the pre-construction surveys, then the following additional measures shall be implemented.

b. If burrowing owls and/or occupied burrowing owl burrows are detected during the pre-construction surveys, the results of the survey, including a Burrow Complex Map, shall be summarized in a survey report and submitted to Metropolitan and CDFW prior to initiating construction activities within 500 feet of burrowing owl locations and/or occupied burrowing owl burrows. The Burrow Complex Map shall

show the locations of all burrowing owl sightings, burrowing owl burrow complex(es), and atypical burrows (i.e., culverts, buckled concrete, etc.), and shall label if the sightings were identified as potential burrows, occupied burrows, satellite burrows, areas of concentrated burrows, and/or burrowing owl sign. If a lapse in construction activities occurs for 14 days or longer within 500 feet of burrowing owl sightings or occupied burrows, Metropolitan shall contact the CDFW to determine if updated pre-construction surveys and an updated Burrow Complex Map are required prior to reinitiating construction activities with potential to disturb burrowing owls;

c. Construction activities with the potential to result in direct or indirect adverse impacts on burrowing owls shall be avoided within approximately 500 feet of burrowing owls and/or occupied burrowing owl burrows during any time of the year to the extent feasible;

d. If construction activities with the potential to result in direct or indirect adverse impacts on burrowing owl cannot be avoided within 500 feet of burrowing owls and/or occupied burrows while burrowing owls are present at any time of the year, the following avoidance measures shall be implemented:

   i. During the burrowing owl breeding season (February 1 to August 31), an avoidance buffer of approximately 500 feet shall be established around all active burrowing owl nesting, roosting, and satellite burrows or the entire burrow complex. The avoidance buffer shall be delineated using stakes, flags, and/or rope or cord. The method of marking the buffer shall be adjusted if corvids, raptors, or other predators are observed perching on marking materials. The avoidance buffer shall be delineated with different materials than those used to delineate the limits of work. All materials used for delineation of the buffer shall be removed and properly disposed of following completion of construction activities, or when burrowing owls are no longer present and/or using the burrow(s). The distance of the avoidance buffer may be reduced where natural (hills, trees) or artificial (buildings, walls) barriers separate the location of construction activities from the active burrowing owl burrows. The final distance of the avoidance buffer shall be at the discretion of a qualified biologist.

   ii. During the burrowing owl non-breeding season (September 1 to January 31), an avoidance buffer of approximately 165 feet shall be established around all active burrowing owl wintering or roosting burrows or the entire burrow complex. The buffer shall be delineated using stakes, flags, and/or rope or cord. The method of marking the avoidance buffer shall be adjusted if corvids, raptors, or other predators are observed perching on marking materials. The avoidance buffer shall be delineated with different materials than those used to delineate the limits of work. All materials used for delineation of the buffer shall be removed and properly disposed of following completion of construction activities, or when burrowing owls are no longer present and/or using the burrow(s). The distance of the avoidance buffer may be reduced where natural (hills, trees) or artificial (buildings, walls) barriers separate the location of

construction activities from the active burrowing owl burrows. The final distance of the avoidance buffer shall be at the discretion of a qualified biologist.

e. If occupied and/or potentially suitable burrowing owl burrows occur within the direct impact area(s) and cannot be avoided by construction activities, the following measures shall be implemented:

   i. Construction activities shall avoid direct physical impacts to active burrowing owl nesting, roosting, and satellite burrows or the entire burrow complex during the burrowing owl breeding season (February 1 to August 31), or until a qualified biologist determined that nesting activities have ceased (i.e., nestlings have fully fledged, are feeding independently and are no longer dependent on the nesting burrow).

   ii. Burrowing owl exclusion and excavation of suitable burrowing owl burrows present within the direct impact area(s) may be conducted with approval of the CDFW once the burrow or burrow complex has been determined to be inactive, during the burrowing owl non-breeding season (September 1 to January 31), or if conducted during the burrowing owl breeding season (February 1 to August 31), only after the nestlings have fully fledged, are feeding independently, and are no longer dependent on the nesting burrow. Methods of burrow exclusion and excavation shall be determined in consultation with CDFW and may include such methods as: burrow monitoring to confirm status; burrow inspection through the use of camera scoping, trail camera, or alternative methods approved by CDFW; installation of one-way doors at the entrance of burrows to allow burrowing owl and other wildlife to vacate the burrows unharmed; or collapsing of vacated burrows.

If direct or indirect adverse impacts cannot be avoided during the review period for burrowing owl as a candidate state endangered species or if burrowing owl is listed as a state endangered species, then Metropolitan shall implement the additional measures below in compliance with the California Endangered Species Act. If the candidate state endangered listing is removed for the burrowing owl and the species does not become listed as a state endangered species, then the additional measures below for the California Endangered Species Act compliance would no longer be required.

f. Prior to the initiation of construction activities that could result in direct or indirect adverse impacts on burrowing owl, Metropolitan shall consult with CDFW in accordance with the California Endangered Species Act. If take of burrowing owl is expected, no construction activities with the potential to result in direct or indirect adverse impacts on burrowing owl shall occur until CDFW has authorized such take through an incidental take permit (ITP), as applicable. Metropolitan shall implement any required avoidance, minimization, and mitigation measures prescribed in the ITP, as applicable beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

g. Prior to the initiation of construction activities that could result in direct physical impacts to active burrowing owl burrows and nest sites (i.e., destruction of burrows determined to be occupied by wintering, roosting, or nesting burrowing owl), a qualified biologist approved by CDFW shall be retained to help facilitate avoidance and minimization actions during project construction to ensure that burrowing owls are not harmed. The qualified biologist, in coordination with CDFW, shall assist with the implementation of measures to prevent direct take of burrowing owl individuals during construction. The CDFW-approved measures for ensuring the burrows do not support an active nest and individual owls are not entrapped within burrows that occur within the approved construction work areas shall include, at a minimum: burrow monitoring to confirm nesting status; burrow inspection through the use of camera scoping, trail camera, or alternative methods approved by CDFW; installation of one-way doors at the entrance of burrows to allow burrowing owl and other wildlife to vacate the burrows unharmed; collapsing of vacated burrows; inspection, removal, and/or concealment of pipes, debris/rock piles, and other areas that could attract burrowing owl onto the approved construction work areas; monitoring construction activities; and weekly reporting to CDFW.

BIO-MM-14 **Compensatory Mitigation for Burrowing Owls.** *Direct impacts to burrowing owl nest sites shall be mitigated in consultation with CDFW in accordance with the California Endangered Species Act.*

Permanent direct impacts to active burrowing owl nest sites shall be offset through compensatory mitigation, which may include, but is not limited to, onsite and/or offsite preservation of burrowing owl habitat demonstrated to support, at a minimum, the number of active burrowing owl nest sites impacted by construction. Lands to be conserved as mitigation for direct impacts shall include: (1) sufficient acreage to support the number of burrowing owl individuals impacted, including adequate territory size and foraging habitat, with fossorial mammals (e.g., California ground squirrel) present; (2) permanent protection through a conservation easement or similar protective instrument for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use; (3) preparation and implementation of a Mitigation Land Management Plan to address long-term ecological sustainability and maintenance of the site for burrowing owls; and (4) funding for the long-term maintenance and management of the mitigation land through the establishment of a long-term funding mechanism, such as an endowment. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Bats

BIO-MM-15 **Updated Bat Habitat Assessment and Bat Surveys.** *A qualified biologist shall conduct an updated bat habitat assessment and focused bat surveys no more than two years prior to construction activities where suitable habitat occurs within or adjacent to direct impact area(s)*.

A qualified biologist with experience conducting bat surveys and acoustic monitoring shall conduct an updated habitat assessment and focused bat surveys no more than two years prior to commencement of construction activities to determine whether special-status bat species are currently present within and adjacent to direct impact area(s) and where construction is scheduled to occur within two years. The biologist shall conduct an updated habitat assessment to identify where potential daytime, nighttime, wintering, and hibernation roost sites occur in and within 100 feet of direct impact area(s). Potential roost sites shall be surveyed with the use of acoustic monitoring to identify roosting bats and any maternity roosts. The results of the survey shall be summarized in a survey report and submitted to Metropolitan, prior to the initiation of construction.

BIO-MM-16 **Bat Roost Avoidance or Exclusion.** If suitable bat roosting habitat is identified in or within 100 feet of direct impact area(s), Metropolitan shall implement the following measures to avoid or minimize impacts to roosting bats.

If, during the updated bat habitat assessment, suitable bat roosting habitat is identified in or within 100 feet of direct impact area(s), a qualified biologist shall conduct pre-construction surveys for roosting bats in and within 100 feet of the direct impact area(s) no more than three days (72 hours) prior to trimming or removal of mature trees or initiation of ground-disturbing construction activities. The survey shall include both a daytime and nighttime component, including an evening emergence survey, and shall be conducted with the use of acoustic recognition technology to maximize the detection of bats. If bats are not detected during the pre-construction survey, construction activities shall be allowed to proceed, and no additional measures would be necessary.

If bats are detected during the pre-construction surveys, the following measures shall be implemented:

a. If bats are detected and determined to be roosting in or within 100 feet of the direct impact area(s) during the bat maternity season (April 15 through August 15), the following avoidance measure shall be implemented:

    i. A qualified biologist shall flag the active roost site and construction activities within 100 feet of the roost site shall be temporarily halted until after the maternity season (August 16), or until the qualified biologist has determined any young present are self-sufficiently volant (able to fly).

b. If bats are detected and determined to be roosting in or within 100 feet of the direct impact area(s) outside of the bat maternity season (August 16 through April 14), the following avoidance measure shall be implemented:

    i. A qualified biologist shall flag the active roost site and construction activities within 50 feet of the roost site shall be temporarily halted until bats are no longer determined to be roosting, as determined by the qualified biologist.

c. If an adequate avoidance buffer cannot be provided between an active roost site and required construction activities, then exclusion of roost sites, where feasible, may be conducted with approval of the CDFW. Methods of roost exclusion shall be

determined in consultation with CDFW and may include such methods as covering the roost entrance/exit with a bat valve (a flap that allows bat to exit but not reenter) using materials such as mesh, plastic sheeting, or tubes, as prescribed by CDFW.

Crotch's Bumble Bee

BIO-MM-17 **Updated Crotch's Bumble Bee Surveys.** If Crotch's bumble bee remains a candidate species or its status becomes elevated to a listed species under the California Endangered Species Act, a qualified biologist shall conduct updated protocol-level surveys for Crotch's bumble bee no more than two years prior to construction activities where suitable habitat occurs in direct impact area(s). If the candidate state endangered listing is removed for Crotch's bumble bee and the species does not become listed as a state threatened or endangered species, then this measure and the additional measures below for CESA compliance (BIO-MM-18 and BIO-MM-19) would no longer be required.

If Crotch's bumble bee remains a candidate species or its status becomes elevated to a listed species under the California Endangered Species Act, a qualified biologist shall conduct protocol-level surveys for Crotch's bumble bee no more than two years prior to the commencement of construction activities in areas supporting suitable habitat to determine the presence/absence of Crotch's bumble bee in direct impact area(s) where construction may occur within two years. The surveys shall be conducted in accordance with current CDFW guidelines as detailed in the CDFW's Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species, dated June 6, 2023 (currently the USFWS's protocol for the rusty patched bumble bee dated, April 12, 2019), or subsequently adopted guidelines. The results of the survey shall be summarized in a survey report and submitted to Metropolitan prior to initiation of construction activities.

If Crotch's bumble bee is found to occur and has potential to be directly or indirectly adversely affected by construction, Metropolitan shall implement the avoidance and minimization measures described in mitigation measure BIO-MM-18.

BIO-MM-18 **Crotch's Bumble Bee Avoidance and Agency Consultation.** *If Crotch's bumble bee remains a candidate species or its status becomes elevated to a listed species under* the *California Endangered Species Act, and the species is found to occur within the direct impact area(s), Metropolitan shall consult with* the *CDFW and implement measures to avoid or minimize impacts.*

If Crotch's bumble bee remains a state candidate species for listing or is listed as threatened or endangered under the California Endangered Species Act and is found to occur within the direct impact area(s) during the updated protocol-level surveys, then the following measures shall be implemented:

a. Prior to initiation of direct impacts to Crotch's bumble bee suitable habitat, Metropolitan shall consult with the CDFW regarding potential effects to the species and, if required by CDFW, obtain take authorization through the issuance of an ITP under Section 2081(b) of the California Fish and Game Code for unavoidable impacts. Metropolitan shall comply with any additional measures (e.g., avoidance,

conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over this resource beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant. Unless otherwise directed by the CDFW, the following measures shall be implemented:

i. Removal (i.e., vegetation clearing, crushing, trimming) of Crotch's bumble bee suitable habitat shall be avoided during the species' flight season (February 1 through October 31) to the extent feasible;

ii. If construction activities must occur during the flight season, a qualified biologist shall conduct a pre-construction survey for Crotch's bumble bee queens, gynes, and colonies. The survey shall be conducted no more than 14 days prior to construction during suitable weather conditions in accordance with CDFW's requirements. If the pre-construction survey is negative, no further assessment shall be required, and construction activities shall be allowed to proceed;

iii. If an active Crotch's bumble bee nest site is detected, an appropriate avoidance buffer shall be established by the qualified biologist. Construction activities shall avoid any active nest sites until a qualified biologist has verified that the nesting colony is no longer active; and

iv. If Crotch's bumble bee is detected but no active nest sites are found, a qualified biological monitor shall be present during vegetation removal activities that are scheduled to occur during the queen flight period (February through March), colony active period (March through September), and/or gyne flight period (September through October). If Crotch's bumble bee is observed within the direct impact area during construction activities, the biological monitor shall immediately stop work activities within the area until the bumble bee freely moves away from the work area.

BIO-MM-19 **Compensatory Mitigation for Crotch's Bumble Bee.** Direct impacts to Crotch's bumble bee occupied habitat shall be mitigated in consultation with the CDFW in accordance with the California Endangered Species Act.

Direct impacts to Crotch's bumble bee occupied habitat shall be mitigated at a minimum 1:1 ratio. Mitigation may occur through one or more of the following: onsite and/or offsite habitat creation, restoration, and/or enhancement; acquisition and preservation of onsite and/or offsite lands demonstrated to be occupied by the species; and/or purchase of mitigation credits at an approved mitigation bank. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over this resource beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

General Resource Avoidance

BIO-MM-20 **Biological Monitoring Program.** *A biological monitoring program shall be implemented to ensure compliance with Pure Water's mitigation measures and to avoid or minimize impacts to sensitive biological resources.*

A qualified biologist shall monitor vegetation removal and construction activities within or adjacent to sensitive biological resources including riparian habitat, sensitive natural communities, jurisdictional waters and wetlands, and areas where special-status plant and animal species have potential to occur. The biologist shall conduct full-time monitoring during vegetation removal activities and periodic monitoring during all other ground-disturbing activities that occur within or adjacent to sensitive biological resource areas.

The biologist shall have the authority to temporarily halt vegetation removal and construction activities and make recommendations to help ensure impact minimization, compliance with the relevant provisions of all environmental permits and regulations, and that work does not take place outside of approved work areas. The qualified biologist shall document all monitoring activities and, at a minimum, send monthly compliance monitoring reports to Metropolitan. In the event that the biologist encounters a non-compliance action, the biologist shall notify Metropolitan's construction manager immediately, and corrective measures shall be implemented, which may require coordination with the USFWS, U.S. Army Corps of Engineers (USACE), CDFW, and/or Regional Water Quality Control Board (Regional Board), as applicable and in accordance with project approvals and permits.

BIO-MM-21 **Restoration of Temporary Impact Areas**. *Areas of native vegetation that are temporarily disturbed by construction shall be restored to pre-*construction *conditions.*

Direct impact area(s) supporting native vegetation that are temporarily impacted by construction shall be restored to pre-construction conditions, including revegetation with a native plant palette, following completion of construction.

Sensitive Habitats

BIO-MM-22 **Compensatory Mitigation for Sensitive Natural Communities.** *Impacts to sensitive natural communities shall be mitigated at ratios and as described below.*

Impacts to alluvial fan sage scrub shall be mitigated at a minimum 1:1 ratio for temporary impacts and a 2:1 ratio for permanent impacts. Mitigation could occur through one or more of the following: onsite and/or offsite habitat creation, restoration, and/or enhancement; acquisition and preservation of onsite and/or offsite land demonstrated to support the habitat; and/or purchase of mitigation credits at an approved mitigation bank. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

Jurisdictional Aquatic Resources

BIO-MM-23 **Compensatory Mitigation for U.S. Army Corps of Engineers Jurisdictional Aquatic Resources.** *Impacts to USACE non-wetland waters of the U.S. shall be mitigated as described, subject to approval.*

Impacts to USACE non-wetland waters of the U.S. shall be mitigated at a minimum 1:1 ratio, subject to approval by the USACE during the permitting process, through one or a combination of the following: onsite and/or offsite establishment, re-establishment, rehabilitation, and/or enhancement of waters of the U.S.; and/or offsite purchase of waters of the U.S. credits at an approved mitigation bank or other location deemed acceptable by the USACE. Impacts to non-wetland waters of the U.S. would require a Clean Water Act Section 404 Nationwide Permit prior to impacts. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

BIO-MM-24 **Compensatory Mitigation for Regional Water Quality Control Board Jurisdictional Aquatic Resources.** *Impacts to Regional Board non-wetland waters of the State shall be mitigated at a ratio and as described below, subject to approval.*

Impacts to Regional Board non-wetland waters of the State shall be mitigated at a minimum 1:1 ratio, subject to approval by the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Board) during the permitting process, through one or a combination of the following: onsite and/or offsite establishment, re-establishment, rehabilitation, and/or enhancement of waters of the State; and/or offsite purchase of waters of the State credits at an approved mitigation bank or other location deemed acceptable by the Los Angeles Regional Board. Impacts to waters of the State would require a Clean Water Act Section 401 Water Quality Certification, Waste Discharge Requirement permit, or waiver prior to impacts. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation) incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

BIO-MM-25 **Compensatory Mitigation for California Department of Fish and Wildlife Jurisdictional Aquatic Resources.** *Impacts to CDFW unvegetated streambed shall be mitigated at a ratio and as described below, subject to approval.*

Impacts to CDFW unvegetated streambed shall be mitigated at a minimum 1:1 ratio, subject to approval by the CDFW during the permitting process, through one or a combination of the following: onsite and/or offsite establishment, re-establishment, rehabilitation, and/or enhancement of streambed; and/or offsite purchase of stream credits at an approved mitigation bank, or other location deemed acceptable by the CDFW. Impacts to CDFW streambed would require notification to the CDFW in accordance with California Fish and Game Code Section 1602 prior to impacts. Metropolitan shall comply with any additional measures (e.g., avoidance, conservation)

incorporated into any permits or authorizations issued by the regulatory agencies with jurisdiction over these resources beyond what is being proposed under this CEQA analysis to reduce the impact to less than significant.

5.2.8 Level of Significance After Mitigation

As described above, **less-than-significant impacts** or **no impacts** would occur associated with wildlife corridors, linkages, and movement; local policies and ordinances; and HCPs or NCCPs. Although construction and operation of Pure Water could result in **significant impacts** to special-status plant species and animal species; sensitive natural communities; and jurisdictional waters and wetlands as defined by the USACE, Regional Board, and CDFW, implementation of mitigation measures **BIO-MM-1** through **BIO-MM-25** would ensure that these impacts would be reduced to **less than significant**.

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5.3 CULTURAL RESOURCES

This section addresses the cultural resources impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts with and without mitigation. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

CULTURAL RESOURCES LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Cultural Resources Survey and Impacts Assessment prepared for the Joint Treatment Site and backbone pipeline (HELIX 2025; Appendix D).

5.3.1 Existing Conditions

5.3.1.1 Cultural Setting

Pre-Contact Period

The pre-contact period chronology for the Southern California coastal region (i.e., the region west of the mountain and desert areas, which includes the entire Pure Water area) that is widely used today is divided into four distinct periods, including Early Man, Milling Stone, Intermediate Prehistoric, and Late Prehistoric, as follows:

- Early Man (circa 10,000 to 6,000 B.C.): Diverse mixtures of subsistence combining hunting and gathering but with a greater emphasis on hunting in many places.

- Milling Stone (6,000 to 3,000 B.C.): Subsistence strategies shift from hunting/gathering to those centered on collecting plant foods and the hunting of small animals; begin to see both extended and loosely flexed burials.

- Intermediate Prehistoric (3,000 B.C. to A.D. 500): Shifts in subsistence strategies to a heavier emphasis on maritime resources, along with a wider use of plant foods, that trend towards adaptations to regional and local resources; fully flexed burials, often placed face-down or face-up, and oriented toward the north or west.

- Late Prehistoric (A.D. 500 to historic context): The increased usage of bow and arrow technology, a matching increase in land and sea mammal hunting, along with the continuation of wide-ranging uses of plant foods; both the diversity and complexity of material culture increase dramatically; increase in populations, accompanied by the presence of larger, more permanent villages.

Historic Background

Spanish Period

The first European explorers to reach Southern California were the members of Juan Rodriguez Cabrillo's 1542 expedition. Between that time and 1769, Spanish, British, and Russian explorers made only limited excursions into Alta California (a province of New Spain that included the current states of California, Nevada, and Utah, as well as portions of Arizona, Wyoming, and Colorado), and none established permanent settlements in the region.

In 1769, the San Diego Presidio was established by Gaspar de Portolá, marking the first Spanish settlement in Alta California. At the same time, Mission San Diego de Alcalá (also in San Diego) was established by the Franciscan Father Junipero Serra, the first of 21 missions built under the direction of Spanish Franciscan monks in Alta California between 1769 and 1823. Portolá proceeded north from San Diego, exploring the Arroyo Seco as he passed through the Los Angeles Basin, before heading through the San Fernando Valley, then reaching the San Francisco Bay on October 31, 1769. On September 4, 1781, 12 years after Portolá's initial visit, a dozen families from Sonora, Mexico, founded El Pueblo de la Reina de los Angeles de la Porciúncula ("The Town of the Queen of Angels on the Portiuncula River"; or simply El Pueblo de la Reina de los Angeles, "The Town of the Queen of Angels") under the specific directions of the Governor of the Californias, Felipe de Neve.

The Portolá expedition marked the beginning of Spanish military supply routes that serviced the newly established missions, including Mission San Gabriel de Arcángel (1771), the first permanent European settlement in the area. In 1772, Spanish Commander Pedro Fages explored a canyon that passed through the mountains north of present-day Gorman and named the area Cañada de Las Uvas, or Grapevine Canyon. Friar Francisco Garces further explored the region in 1776, and Spanish settlers began establishing ranchos in the San Fernando Valley by the 1790s.

Almost immediately, the Franciscan padres began attempts at converting the local Indigenous populations to Christianity through baptism, as well as relocating them to mission grounds. Twenty-six years after the establishment of Mission San Gabriel de Arcángel, the San Fernando Mission was founded in 1797, as a stopping point between the San Gabriel and San Buenaventura missions. Most of the Indigenous population in the Los Angeles Basin, as well as the surrounding foothill and mountain ranges, were persuaded or forced to settle near the two missions. These included Tataviam, Chumash,

the Gabrieleno, the Serrano, many Cahuilla as far as the Coachella and San Jacinto valleys, and even some Luiseño of the San Jacinto Valley, as well as Indigenous groups from the southern Channel Islands.

Mexican Period

The primary focus of the Spanish during their occupation of California was the construction of the mission system and associated presidios for the purpose of integrating the Native American population into Christianity. While there were incentives provided by the Spanish monarchy to entice settlers to pueblos or towns, only three pueblos were established during the Spanish period, of which only two were successful and remained as California cities (San José and Los Angeles). Several factors hindered growth within Alta California, including the threat of foreign invasion, political dissatisfaction, and unrest among the Indigenous population. In 1821, after more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain. A year later, in 1822, the Mexican legislative body in California ended the Spanish isolationist policies of the region and decreed California ports open to foreign merchants.

Although Mexico had gained its independence in 1821, Spanish patterns of culture and influence remained for some time. The missions continued, operating in mostly the same fashion as they had previously, and most of the laws related to the distribution of land did not change throughout the 1820s. Beginning in the 1820s, extensive land grants were established in the interior, partly to increase the population inland and away from the more settled coastal areas where the Spanish had concentrated their colonization efforts. Furthermore, the secularization of the missions in 1834 resulted in the subdivision of former mission lands and the establishment of additional ranchos. These massive swaths of land were granted to prominent and well-connected individuals as ranchos, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities. During the age of the ranchos (1834 to 1848), landowners focused their resources on the cattle industry and devoted large tracts to grazing. Cattle hides were the primary Southern California export during this time, used to trade for goods from the east and other areas in the United States and Mexico. The influx of explorers, trappers, and ranchers associated with the land grants increased the number of non-native inhabitants of the region, and this rising population contributed further to the decimation of the Indigenous population, from the introduction and rise of diseases foreign to them, and from the violence enacted against them.

American Period

The United States took control of California in 1846, seizing Monterey, San Francisco, San Diego, and Los Angeles with little resistance. Los Angeles soon slipped from American control, however, and was retaken in 1847. Approximately 600 U.S. sailors, Marines, Army dragoons, and mountain men converged under the leadership of Colonel Stephen W. Kearney and Commodore Robert F. Stockton in early January of that year to challenge the California resistance, which was led by General Jose Maria Flores. The American party scored a decisive victory over the Californios in the Battle of the Rio San Gabriel and at the Battle of La Mesa the following day, effectively ending the war and opening the door for increased American immigration. Hostilities officially ended with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming, representing nearly half of Mexico's pre-1846 holdings. California joined the Union in 1850 as the 31st

state. Though the discovery of gold in northern California in 1848 gave rise to the California Gold Rush, the first California gold was found in Los Angeles County in 1842. The large strike at Sutter's Creek seven years later led to an enormous influx of American citizens in the 1850s and 1860s, and these "forty-niners" rapidly displaced the old rancho families. One year after the discovery of gold, nearly 90,000 people journeyed to the California gold fields. With most miners drawn to central California by its well-known strikes, Los Angeles attracted people who were largely peripheral to the Gold Rush.

The California Gold Rush also affected the Pure Water area. Gold was discovered in San Gabriel Canyon in 1854 and led to the short-lived settlement of El Doradoville in the San Gabriel Valley, where the river forks, about 10 miles northeast of the backbone alignment. The miners who flocked there are said to have extracted gold valued at $12,000,000 from the river before the settlement was flooded out less than a decade later.

5.3.1.2 Ethnography

Pure Water would be located within the region that has traditionally been occupied by the Indigenous Gabrieleno people (also spelled as Gabrieleño or Gabrielino). Other Indigenous groups in the surrounding areas include the Chumash to the north and northwest, the Tataviam/Alliklik to the north, the Serrano to the east, and the Luiseño and Juaneño to the south. Interactions between these groups are well-documented, comprised primarily of trade and intermarriage.

The name Gabrieleno identifies the Indigenous people who were administered by the Spanish missionaries settled at Mission San Gabriel. This group is now considered to have a regional dialect of the Gabrieleno language, along with the Santa Catalina Island and San Nicolas Island dialects. In the post-European contact period, Mission San Gabriel included natives of the greater Los Angeles area, while also including members of surrounding Indigenous groups from other areas such as Kitanemuk, Serrano, and Cahuilla. There is little evidence that the people we call Gabrieleno had a broad term for their group; rather, they identified themselves as an inhabitant of a specific community with locational suffixes (e.g., a resident of Yaanga was called a Yabit, much the same way that a resident of New York is called a New Yorker).

Several native words have been suggested as labels for the broader group of Indigenous people from the Los Angeles region. These include Tongva (or Tong-v) and Kizh (Kij or Kichereno), though evidence indicated that these terms referred to local places or smaller groups of people within the larger group that we now call Gabrieleno. Nevertheless, many present-day descendants of these people have taken on Tongva or Kizh as preferred group names because they have a native rather than Spanish origin. As there are multiple tribal groups descended from the Indigenous people of the Los Angeles Basin, the term Gabrieleno is used in the remainder of this section when discussing the Indigenous people of the Los Angeles Basin and their descendants.

5.3.1.3 Pure Water Area History

Historic Flood Control Efforts

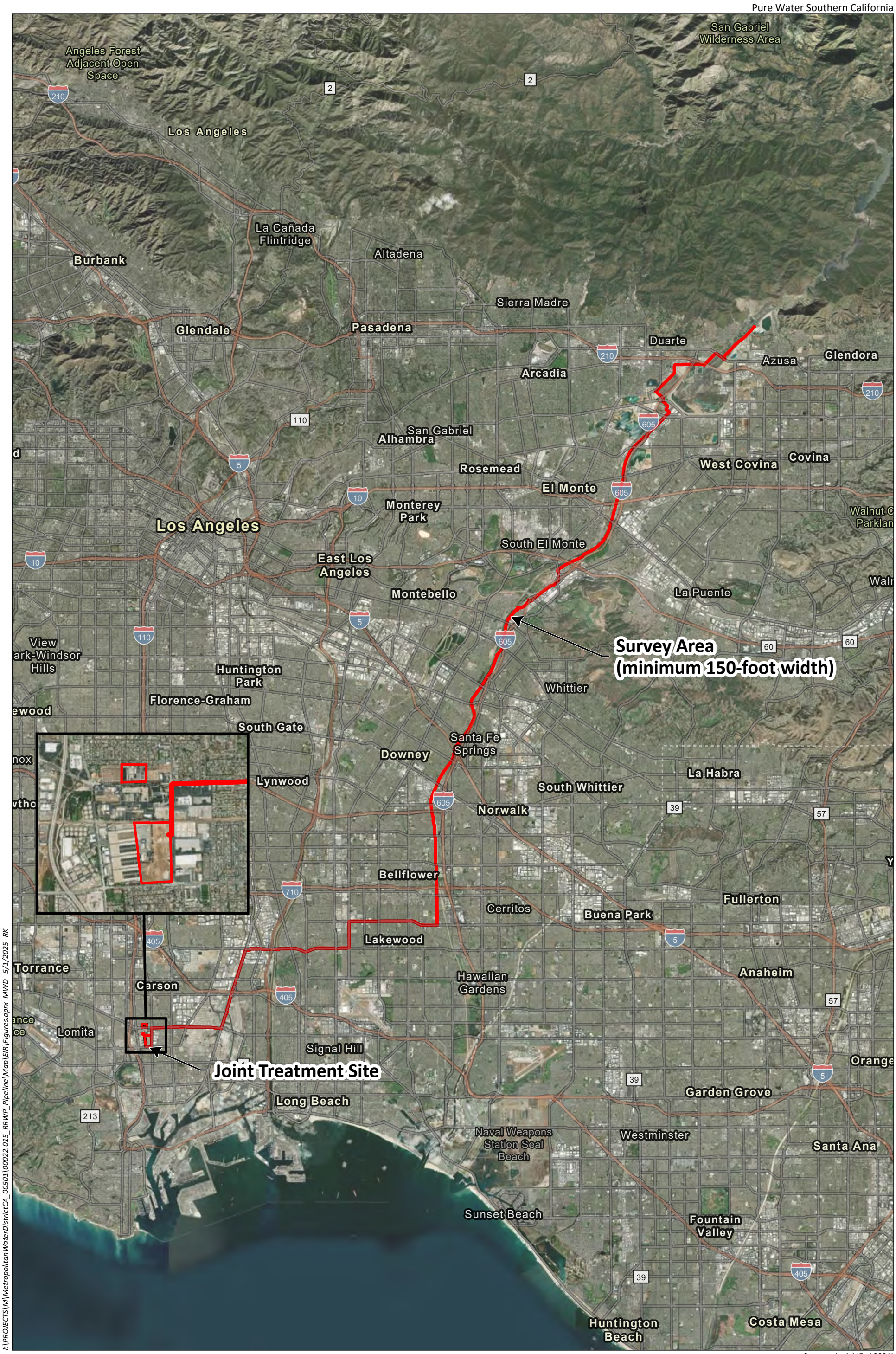
The San Gabriel River was channelized as part of the massive Los Angeles County Drainage Area flood control program between 1915 and 1949. Prior to river channelization efforts and dam construction, floods ravaged the Los Angeles Basin, bringing rock, gravel, and debris in addition to floodwaters.

The Los Angeles County Flood Control District was created by an act of the California State Legislature in June 1915, its purpose being "to provide for the control and conservation of flood, storm, and other waste waters and to conserve such waters for beneficial and useful purposes." "By December 1933, works of the Los Angeles County Flood Control District that had either been completed or were in progress included 16 reservoirs; 412 miles of regulated mountain and foothill watersheds; spreading grounds on Thompson Creek, Pacoima Wash, San Antonio Wash, and the San Gabriel River; and 132 miles of permanently improved drainage channels" (Van Wormer 2015). Although additional channel improvements were still needed throughout the Los Angeles Basin, the public voted down bond issues in 1926 and in the early 1930s; an appeal to the federal government for funds was also denied. Unfortunately, on New Year's Day 1934, floodwaters carrying tons of mud, rock, and debris inundated the communities of Glendale, Montrose, and La Crescenta, leaving 41 people dead and millions of dollars in property damage. Federal legislation in the mid- to late-1930s led to the Los Angeles County Drainage Area project undertaken by the USACE. Another flood in 1938, which left 100 people dead and $35 million in damages, spurred on the flood control efforts; all the previously installed flood control facilities functioned properly, saving lives and preventing damage. A comprehensive plan for the Los Angeles County Drainage Area was completed in 1940. For the San Gabriel River drainage, works approved included the Santa Fe and Whittier Narrows flood control basins, debris basins on seven tributaries to the Rio Hondo, improvement of 36 miles of main channel and 69 miles of tributary channels on the San Gabriel River, as well as an additional 10 miles of main channel and 35 miles of tributary channels on the Rio Hondo, and the reconstruction of 207 bridges (Van Wormer 2015).

Work on the Santa Fe Dam, located adjacent to the backbone alignment in the City of Irwindale, was temporarily halted during World War II, and the dam was completed in 1949. The dam functions as a dry dam, with its reservoir empty most of the year. During large floods, water is stored behind the dam and then released as quickly as possible without exceeding the capacity of downstream levees. Releases from the Santa Fe Dam are coordinated with Whittier Narrows Dam 10 miles downstream, as well as the upstream Cogswell, San Gabriel, and Morris Dams, to provide flood protection to cities along the San Gabriel River. By capacity, it is the second largest dam along the San Gabriel River, after Whittier Narrows (Van Wormer 2015).

5.3.1.4 Identified Resources

The cultural resources pedestrian survey area consisted of the Joint Treatment Site and a 75-foot buffer on either side of the backbone alignment (**Figure 5.3-1**). To identify cultural resources in proximity to the cultural resource survey area, the Cultural Resources Survey and Impacts Analysis (HELIX 2025) was prepared that included records searches of the California Historical Resources Information System from the South Central Coastal Information Center, review of previous archaeological studies, archaeological field surveys, and built environment field surveys. The records searches and review of previous studies included a 500-foot radius from the Joint Treatment Site and backbone alignment. This extended area yielded 61 cultural resources, 22 of which are fully or partially within the cultural resources survey area. Of these 22 resources, 6 are archaeological sites and 16 are built environment resources. Only two of these resources have precontact components: the Gabrieleno village of *Sejat* (P-19-000182; CA-LAN-182) and the Mojave Road (P-19-187085), which includes both historic and precontact elements. All of the previously recorded archaeological resources other than *Sejat* and the Mojave Road that have been identified fully or partially within the cultural resources survey area are of historic age (i.e., at least 45 years old). These consist of Pio Pico State Historic Park, Santa Fe Springs Park, historic refuse dumps, historic refuse scatters, and a property with concrete slabs likely associated with structures constructed at the site in 1968 for use as a gaging station used to monitor flows in the San



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Source: Aerial (Esri 2021)

0 3 Miles

PUREWATER SOUTHERN CALIFORNIA

Cultural Resources Survey Area

Figure 5.3-1

Gabriel River (P-19-190501). In addition, five newly identified archaeological resources (consisting of refuse scatters and one shell scatter) and six newly identified built environment resources (consisting of railroads and bridges) were recorded during the pedestrian surveys as fully or partially within the cultural resources survey area, bringing the total number of resources within the survey area to 33 (**Table 5.3-1**).

Table 5.3-1
CULTURAL RESOURCES FULLY OR PARTIALLY WITHIN THE CULTURAL RESOURCES SURVEY AREA

Resource Number	Description	NRHP/CRHR Eligibility Recommendation	Project Impacts
P-19-000182 (CA-LAN-182)	The Gabrieleno village of *Sejat*	Eligible, no information on criteria	No – tunneling
P-19-001179 (CA-LAN-1179)	Pio Pico State Historic Park	Not evaluated	No – tunneling
P-19-001368 (CA-LAN-1368H)	Historic debris dump	Not eligible	Yes
P-19-003117 (CA-LAN-3117H)	Large historic refuse scatter	Not eligible	Yes
P-19-003118 (CA-LAN-3118H)	Historic refuse scatter and a historic plow	Not eligible	Yes
P-19-004079 (CA-LAN-4079H)	A complex of structures, foundations, and ranches dating to between the 1950s and the 1960s	Not eligible	Yes
P-19-186110	Segments of the Union Pacific Railroad, dating to the 1870s	Not evaluated; considered eligible only for the purposes of the I-605 Corridor Improvement Project	No – tunneling
P-19-186112	Segments of the Southern Pacific Railroad, dating to the 1870s	Not evaluated; considered eligible only for the purposes of the I-605 Corridor Improvement Project	No – tunneling
P-19-186804	Segments of the Burlington Northern Santa Fe (formerly Atchison, Topeka and Santa Fe) Railroad, dating to the 1880s	Not evaluated; considered eligible only for the purposes of the I-605 Corridor Improvement Project	No – tunneling
P-19-186868	KMEP Carson Terminal	Not evaluated	No – potential staging areas on pavement outside tank areas
P-19-187085	The historic Mojave Road, a Native American trail, federal government supply and mail route, a freight and emigrant wagon route, and a recreational trail	Eligible; California Historic Landmark No. 963	No – tunneling
P-19-188983	The Boulder Dam – Los Angeles 287.5 kV Transmission Line, built in the 1930s	Eligible for NRHP (Criteria A and C)	No
P-19-190501	The Amberwood Avenue property, consisting of	Not eligible	Yes

Resource Number	Description	NRHP/CRHR Eligibility Recommendation	Project Impacts
	foundations and open space, dating to the 1960s		
P-19-190504	The Southern California Edison (SCE) Rio Hondo-Amador-Jose-Mesa-Narrows 66 kV Transmission Line, dating to the 1950s	Not eligible	No
P-19-190505	The SCE Mesa-Walnut 220 kV Transmission Line, dating to the 1950s	Not eligible	No
P-19-190508	The SCE Walnut-Hillgen-Industry-Mesa-Reno 66 kV Transmission Line, dating to the 1950s	Not eligible	No
P-19-190510	The San Gabriel River Levee, Arcadia-El Monte-Irwindale Span, a levee that dates to the 1950s	Not evaluated; considered eligible for the purposes of the Joint Outfall F Unit 3A Trunk Sewer Rehabilitation Project only	No
P-19-190992	Foothill Boulevard Bridge	Not eligible	No
P-19-192309	The SCE Long Beach-Laguna Bell 60 kV and 220 kV Transmission Lines, dating to the 1920s	Recommended eligible (Criteria A/1 and C/3)	No
P-19-192581	The SCE Antelope-Mesa 220 kV Transmission Line, dating to the 1940s	Not eligible	No
P-19-192829	Santa Fe Springs Park	Not eligible	No – tunneling
P-19-192850	The Santa Fe Dam and Flood Control Basin, built in the 1940s	Eligible (Criteria A/1 and C/3)	Yes – trenching in spillway
PW-S-001	Historic refuse scatter	Not yet evaluated	Yes
PW-S-002	Historic refuse scatter	Not yet evaluated	Yes
PW-S-003	Historic refuse scatter	Not evaluated	No – tunneling
PW-S-004	Historic refuse scatter	Not evaluated	No – tunneling
PW-S-005	Two segments of the Southern Pacific Railroad constructed in the 1960s	Not evaluated	No
PW-S-006	Three segments of the Pacific Electric Railroad	Not evaluated	No
PW-S-007	Two small segments of the Atchison Topeka and Santa Fe Railroad	Not evaluated	No
PW-S-008	A portion of the Pacific Electric Railroad located between the San Gabriel River and I-605 at Los Nietos Road	Not evaluated	No
PW-S-009	Bridge No. 53C1406 (Main Street Overpass). Railroad bridge located at Main Street, south of Sepulveda Boulevard within the City of Carson. Oldest bridge of its type in Los Angeles County.	Not evaluated	No – tunneling

Resource Number	Description	NRHP/CRHR Eligibility Recommendation	Project Impacts
PW-S-011	Bridge No. 53C0593 (Del Amo Boulevard Overpass). Railroad bridge built for the Union Pacific Railroad.	Not evaluated	No
JWPCP-S-001	Large highly disturbed shell scatter in secondary context	Recommended as not eligible, although not formally evaluated	Yes – construction activities related to the Joint Treatment Site

The Gabrieleno village of *Sejat* and six of the built environment resources (consisting of the Union Pacific Railroad, the Mojave Road, transmission lines, and the Santa Fe Dam and Flood Control Basin) are considered historical resources for the purposes of California PRC Section 21084 and historic properties under Section 106 of the National Historic Preservation Act (NHPA). An additional four built environment resources have not been formally evaluated but have been assumed eligible for the purposes of specific projects; that is, impacts to these four resources were avoided by specific projects (the I-605 Corridor Improvement Project and the Joint Outfall F Unit 3A Trunk Sewer Rehabilitation Project) in lieu of formal evaluation. Several other resources, noted above in **Table 5.3-1**, have not yet been evaluated.

5.3.1.5 Potential for Additional Resources

Some areas of the backbone alignment have a moderate to high sensitivity for the presence of buried cultural resources due to their locations along the San Gabriel and Los Angeles rivers, as well as proximity to mapped historic railways and historic ranchos, and past use of these areas by the Gabrieleno people, even where no precontact resources have been recorded. This assessment of sensitivity is based on traditional Indigenous knowledge, as well as the finding of buried resources archaeologically in alluvial settings in general, as the ground surface is buried by repeated episodes of soil deposition during routine flood events over long periods of time.

The Joint Treatment Site and remaining portions of the backbone alignment are categorized as low to moderate sensitivity due to the high degree of past disturbance, developed nature of these areas, and the lack of previously recorded cultural material. There continues to be a potential for buried cultural resources in these areas due to the alluvial nature of the sediment, however no cultural resources sites have been previously identified in these areas.

5.3.2 Regulatory Framework

5.3.2.1 Federal

Federal regulations that would be applicable to Pure Water due to a federal nexus (e.g., permitting or funding from a federal agency) consist of the NHPA and its implementing regulations (16 United States Code [U.S.C.] 470 *et seq*., 36 CFR Part 800). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on "historic properties," that is, properties (either built environment or archaeological) that are eligible for the National Register of Historic Places (NRHP).

National Register of Historic Places Criteria

In order to qualify for the NRHP, a property must be significant at the local, state, or national level, under one or more of four criteria. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects:

A. That are associated with events that have made a significant contribution to the broad patterns of our history;

B. That are associated with the lives of persons significant in our past;

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, an NRHP-eligible property must also retain sufficient integrity to convey its significance and be at least 50 years of age or of extraordinary importance. Integrity is the authenticity of a historic property's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historic properties and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

Although not all seven aspects of integrity need to be present for a property to be eligible, the property must retain enough physical and design characteristics to reflect the property's significance. The seven aspects of historical integrity are:

- Location is the place where a resource was constructed or where an event occurred;
- Design results from intentional decisions made during the conception and planning of a resource. Design includes form, plan, space, structure, and style of a property;
- Setting applies to a physical environment, the character of a resource's location, and a resource's relationship to the surrounding area;
- Materials comprise the physical elements combined or deposited in a particular pattern or configuration to form a property;
- Workmanship consists of the physical evidence of crafts employed by a particular culture, people, or artisan, which includes traditional, vernacular, and high styles;
- Feeling relies on present physical features of a property to convey and evoke an aesthetic or historic sense of past time and place; and

- Association directly links a historic property with a historic event, activity, or person of past time and place; and requires the presence of physical features to convey the property's historic character.

5.3.2.2 State

California Environmental Quality Act

Section 21084.1 of the PRC notes that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Section 5024.1 of the PRC establishes the California Register of Historical Resources (CRHR) and sets forth the criteria for listing in the CRHR. The CEQA Guidelines (CCR Title 14 Section 15064.5) address determining the significance of impacts to archaeological and historical resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance (Office of Historic Preservation 1995). Historical resources are defined per PRC 21084.1 and CEQA Guidelines Section 15064.5 as follows:

- Resource(s) listed or eligible for listing in the CRHR (14 CCR Section 15064.5[a][1]);

- Resource(s) either listed in the NRHP or in a "local register of historical resources" unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2]); and

- Resources identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC (14 CCR Section 15065.5[a][2]).

CEQA and the CEQA Guidelines also contain definitions and requirements related to Tribal Cultural Resources (TCRs), which are separately addressed in Section 5.12, *Tribal Cultural Resources*.

California Register of Historical Resources Criteria

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(3), the final category of "historical resources" may be determined at the discretion of the lead agency.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 and CEQA Guidelines Section 15064.5 state that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification.

California Public Resources Code 5097.98

PRC Section 5097.98 and CEQA Guidelines Section 15064.5 state that the NAHC, upon notification of the discovery of Native American human remains pursuant to California Health and Safety Code Section 7050.5, shall immediately notify those persons that it believes to be descended from the deceased (i.e., the Most Likely Descendant [MLD]). With permission of the landowner or an authorized representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

5.3.2.3 Local

The following local goals, objectives, and policies apply to Pure Water.

County of Los Angeles

The County of Los Angeles has the following applicable goals and policies for historic, cultural, and paleontological resources:

Goal C/NR 14: Protected historic, cultural and paleontological resources.

Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.

Policy C/NR 14.3: Support the preservation and rehabilitation of historic buildings.

Policy C/NR 14.4: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill (SB) 18 (2004).

Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

City of Azusa

The City of Azusa's Historic Preservation Ordinance, adopted in 2000, determines the intent of historic preservation in the city. Landmark designations, historic review procedures, and historic preservation incentives are administered by the Cultural and Historic Preservation Commission. The City is currently preparing the Historic Context Statement and Historic Survey Update.

The original Historic Property Survey List prepared in 2000 included 96 potential historic properties or historical resources and three potential historic districts (the Downtown Historic District, the Foothill Historic District, and the Sunset/San Gabriel Historic District). The Azusa Civic Center, located at 213 East Foothill Boulevard, is the only property within the city recognized by the State Office of Historic Preservation as a historical resource (i.e., a significant resource) and included on the NRHP.

City of Baldwin Park

The City of Baldwin Park established its historic preservation program in 1988, with the adoption of a Historic Resources Code. The ordinance allows for the designation of both individual landmarks and historic districts: the Municipal Code includes Section 153.080 on Historic Overlay Zones, Part 10 (Sections 153.210.510-153.210.550) on Historic Designation, and Part 11 (Sections 153.210.560-153.210.580) on Historic Structure Work Permit. Historic designations are approved by the City Council based on the recommendation of the Historic Resources Advisory Committee.

The City has only designated one landmark since the historic preservation program began, the former Central School Auditorium, but it was ultimately de-listed in the mid-1990s. Historic resources conservation is also stated as one of the goals of the Open Space and Conservation Element of the 2020 General Plan prepared in 2002.

City of Bellflower

The City of Bellflower does not currently have a historic preservation ordinance.

City of Carson

The City of Carson does not currently have a historic preservation ordinance.

City of Cerritos

The City of Cerritos does not currently have a historic preservation ordinance. The General Plan adopted in 2004 includes goal LU-11, “Preserve and enhance existing community and neighborhood character and sense of place” and acknowledges the architectural, cultural, or historical character of unique districts and neighborhoods.

City of Downey

The City of Downey does not currently have a historic preservation ordinance. The General Plan adopted in 2005 includes Goal 8.4, which suggests the identification, preservation, and enhancement of the City's existing cultural resources. Issue 8.4, Cultural Resources, recognizes the role of cultural amenities, including those of historical, architectural, and archaeological value. It outlines a short list of Downey’s significant built environment resources, consisting of six properties (none formally designated as a City landmark): the Rives Home at Paramount Boulevard and Third Street (listed in the NRHP and CRHR), Casa de Parley Johnson at 7749 Florence Avenue (listed in the NRHP and CRHR), McDonald’s Restaurant at 10207 Lakewood Boulevard (eligible for listing in the NRHP; listed in the CRHR), Rancho Los Amigos Medical Center (approximately 40 buildings, some of which have been assessed as NRHP- or CRHR-eligible), the Dismukes House at Apollo Park, and the Historical Arch at Civic Center Drive. The latter two resources do not appear to be listed on the NRHP or CRHR, and the preservation ordinance does not indicate whether they have been formally assessed for eligibility.

City of Duarte

While the City of Duarte does not have an established historic preservation ordinance, it did complete its first citywide survey of architectural resources in 2003. In 2007, Duarte adopted a Historic Preservation Element as part of its General Plan; this includes the following applicable goals, objectives, and policies:

Historic Preservation Goal 3: To promote the preservation of local historical resources.

Objective 3.1 Preserve the City's inventory of historical resources for future generations to enjoy.

Policy HP 3.1.1 Encourage property owners to preserve the character-defining features of historical resources.

City of Industry

The City of Industry does not currently have a historic preservation ordinance.

City of Irwindale

The City of Irwindale does not currently have an active historic preservation ordinance. The "Cultural & Historic Resources" section in the City's 2008 General Plan contains a list of "Existing Historic Resources in Irwindale," identifying seven sites of historical significance: the El Divino Salvador Presbyterian Church on Irwindale Avenue at Calle del Norte, Our Lady of Guadalupe Catholic Mission on Arrow Highway, the first post office site in the former Southern Pacific Depot on Irwindale Avenue, the residence located at 2408 Mountain Avenue, the home of Don Gregorio Fraijo at the terminus of Central Avenue, Don Facundo Ayon's home (now City Hall), and Mr. Irwin's Ranch property.

City of Lakewood

The City of Lakewood does not currently have a historic preservation ordinance.

City of Long Beach

The City of Long Beach has had an active program to recognize buildings and neighborhoods that have special architectural or historical value since 1988. In 2009, the City adopted a historic context statement and conducted a survey of historic-aged built environment resources located within the Downtown Long Beach Planned Development District. The historic preservation ordinance (Chapter 2.63.060 of the City of Long Beach Municipal Code) was last updated in 2015. It establishes the procedures for the designation of individual landmarks and landmark districts administered by the Cultural Heritage Commission. Designated historic landmarks are listed in Chapter 16.52 of the Municipal Code. Designated historic resources, including those eligible for the NRHP, CRHR, or local designation, in the City number over 100 local landmarks and 18 historic districts.

Historic Preservation Element

The City of Long Beach Historic Preservation Element was adopted by the City Council in 2010, to create a proactive, focused plan for use by residents, local preservation advocates, City staff, the Cultural Heritage Commission, Redevelopment Agency, Planning Commission, and City Council. The Historic

Preservation Element outlines a vision for future historic preservation efforts and the actions that need to be taken to achieve them. Development of the Historic Preservation Element was coordinated with the City's 2030 General Plan update. The Element's applicable goal includes protecting historic resources from demolition and inappropriate alterations.

Additional information on the corresponding policies and implementation measures adopted by Long Beach for each of its historic preservation goals can be found in the Historic Preservation Element of the General Plan.

Local Designation

A resource must meet one or more of the following criteria of significance to be designated as a landmark or landmark district:

Criterion A: It possesses a significant character, interest, or value attributable to the development, heritage, or cultural characteristics of the city, the Southern California region, the state or the nation.

Criterion B: It is the site of a historic event with a significant place in history.

Criterion C: It is associated with the life of a person or persons significant to the community, city, region or nation.

Criterion D: It portrays the environment in an era of history characterized by a distinctive architectural style.

Criterion E: It embodies those distinguishing characteristics of an architectural type or engineering specimen.

Criterion F: It is the work of a person or persons whose work has significantly influenced the development of the city or the Southern California region.

Criterion G: It contains elements of design, detail, materials, or craftsmanship that represent a significant innovation.

Criterion H: It is a part of or related to a distinctive area and should be developed or preserved according to a specific historical, cultural or architectural motif.

Criterion I: It represents an established and familiar visual feature of a neighborhood or community due to its unique location or specific distinguishing characteristic.

Criterion J: It is, or has been, a valuable information source important to the prehistory or history of the city, the Southern California region, or the state.

Criterion K: It is one of the few remaining examples in the city, region, state, or nation possessing distinguishing characteristics of an architectural or historical type.

City of Norwalk

The City of Norwalk does not currently have a historic preservation ordinance. The Historic Resources section of the Educational and Cultural Resources Element of Norwalk's General Plan adopted in 1996 lists three historic properties and one historic district: (1) Sproul Museum (historic house), 12237 Sproul Street, "appears to be eligible for the NR"; (2) Pattison Ranch, 11951 Imperial Highway, listed in the NRHP and CRHR as "Paddison Ranch Buildings"; (3) Darius David Johnston (Hargitt House), 12436 Mapledale Street, listed in the NRHP and CRHR; and (4) Front Street commercial buildings (not listed in the NRHP or CRHR, apparently not formally evaluated).

City of Pico Rivera

The City of Pico Rivera does not currently have a historic preservation ordinance. The 1993 General Plan Environmental Baseline Report contains a list of 47 potentially historic resources in the city.

City of Santa Fe Springs

The City of Santa Fe Springs does not currently have a historic preservation ordinance.

City of Whittier

The City of Whittier established its Historic Resources Element in the 1993 Whittier General Plan in order to promote the preservation of historic structures in the City (City of Whittier 2021). The 2021 General Plan contains the following applicable goals and policies as part of the Historic Resources Element:

Goal 1: Historic Resources Identification: Identify historic, cultural, and archaeological resources.

- HR-1.1: Evaluate potential historic resources and evaluate/provide required contextual statements for additional residential and commercial districts, as requested by the City Council and/or individual property owner(s).

- HR-1.6: Understand that areas located along the San Gabriel River and in the Puente Hills have high potential for archeological resources.

Goal 2: Update the City's Historic Preservation Program to align with best practices.

- HR-2.1: Enhance, restore, preserve, and protect, as appropriate, historic resources throughout Whittier.

- HR-2.2: Encourage the retention and/or adaptive reuse of historic residential, commercial, and industrial buildings.

Goal 3: Protect historic and cultural resources from demolition, destruction, or inappropriate actions or consequences.

- HR-3.2: Suspend development activity when archaeological and/or paleontological resources are discovered during construction.

- HR-3.3: Encourage compatible new development of and near buildings, structures, sites, districts, and landscapes with historic designations to ensure limited physical and visual impact to existing historic resources and within older neighborhoods.

The City of Whittier's Historic Resources Ordinance seeks to promote the public health, safety, and general welfare. The Ordinance also lists four Historic Districts within the City: the Earlham Historic District, the Hadley/Greenleaf Historic District, the Central Park Historic District, and the College Hills Historic District.

5.3.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to cultural resources. Pure Water would have a significant impact if it would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;

2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or

3. Disturb any human remains, including those interred outside of dedicated cemeteries.

5.3.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The EC relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

GM-EC-1 **Environmental Awareness Training.** Prior to construction, the Contractor shall attend an Environmental Awareness Training with Metropolitan's construction management team and designated environmental monitors (i.e., qualified biologist, archaeologist, Native American monitor, paleontologist, hazardous materials specialist, as applicable). An Environmental Awareness Training program shall inform all employees of the sensitive resources known or with potential to occur in the local area; the sensitivity of the area in which they will be working; and environmental measures and requirements to comply with project approvals and environmental permits and regulations.

5.3.5 Impact Analysis

5.3.5.1 Topic 1: Historical Resources

Would Pure Water cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Program-Level Analysis

As discussed in Section 5.3.1.4, 61 cultural resources have been recorded within a 500-foot radius from the Joint Treatment Site and backbone alignment, consisting of both archaeological (11) and built environment (50) resources. Some of these resources are considered historical resources under CEQA; the precise number of historical resources within the 500-foot radius is not known because not all the recorded resources have been assessed for significance/eligibility. Additionally, while the locations of other Pure Water facilities and components have not yet been defined, recorded resources may occur in their vicinity, which would be determined once specific facility location information is known. There is also the potential for other resources that have not yet been identified to occur; this includes built environment resources that have not yet reached the 45-year age threshold for evaluation but will reach that age during the life of the Program. If such resources are identified, they would be evaluated and could be determined to be historical resources if they meet the applicable criteria.

Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance and/or demolition of existing structures, have the potential to affect both currently identified historical resources (based on records search data and the field survey), as well as those that have not yet been identified. Potential impacts associated with the project-level components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water components are unknown at this stage of program design, there is potential for these components to be sited within or adjacent to historical or potentially historical resources, which could cause a substantial adverse change in the significance of such resources (i.e., a significant effect under CEQA). Once the specific locations of these Pure Water components are determined, additional, site-specific cultural resources studies would be conducted in and adjacent to these locations to identify any resources. If resources identified as historical resources under CEQA cannot be avoided, the significance of these resources could be affected; therefore, impacts are considered **potentially significant**.

Project-Level Analysis

Twenty-two previously recorded cultural resources and 11 newly recorded cultural resources, for a total of 33 identified cultural resource sites, have been identified within the cultural resource survey area. These consist of 22 built environment resources and 11 archaeological resources.

Of the 33 cultural resources occurring within the boundaries of the cultural resource survey area, 9 would be subject to impacts from implementation of Pure Water, as they are within the construction footprint (**Table 5.3-2**). Seven of the nine resources that would be impacted are archaeological in nature, four of which are not eligible as historical resources, and two of which have not been evaluated for eligibility as historical resources. One newly identified resource (a shell scatter) is recommended as not eligible as a historical resource due to its surficial nature and the fact that it appears to be located in imported fill material. Of the two built environment resources that would be directly affected by Pure

Water, one (the Santa Fe Dam and Flood Control Basin) has been assessed as NRHP- and CRHR-eligible, while the other (Woodland Farm) has been recommended as not eligible for listing.

Table 5.3-2
CULTURAL RESOURCES SUBJECT TO IMPACTS FROM PURE WATER

Resource Number (P-19-)	Description	NRHP/CRHR Eligibility Status
Archaeological Resources		
001368 (CA-LAN-1368H)	Historic debris dump	Not eligible
003117 (CA-LAN-3117H)	Large historic refuse scatter	Not eligible
003118 (CA-LAN-3118H)	Historic refuse scatter and a historic plow	Not eligible
190501	The Amberwood Avenue property, consisting of foundations and open space, dating to the 1960s	Not eligible
PW-S-001	Historic refuse scatter	Not yet evaluated
PW-S-002	Historic refuse scatter	Not yet evaluated
JWPCP-S-001	Large, highly disturbed shell scatter in secondary context	Recommended as not eligible, although not formally evaluated
Built Environment Resources		
004079 (CA-LAN-4079H)	Woodland Farm, consisting of a complex of structures, foundations, and ranches dating to between the 1950s and the 1960s	Not eligible
192850	The Santa Fe Dam and Flood Control Basin, built in the 1940s	Eligible (Criteria A/1 and C/3)

Four known historic refuse scatters and one historic debris dump would be affected along the backbone alignment. Three of these scatters (CA-LAN-1368H, CA-LAN-3117H, and CA-LAN-3118H) were previously assessed as not eligible for listing in the NRHP and CRHR. In addition, all three of these sites have been subject to substantial disturbance; at CA-LAN-3118H, the only item observed during the 2022 survey was a plow; the rest of the site appears to have been destroyed by past use of the area, including plowing, grazing, levee construction, and the construction and maintenance of SCE transmission lines. Two newly recorded historic refuse scatters, PW-S-001 and PW-S-002, would be subject to impacts from Pure Water as currently proposed. The sites have not yet been evaluated for NRHP and CRHR eligibility. The research potential of these sites appears to be limited; they are refuse scatters, a quite common site type, with a limited range of cultural material. As such, these two sites are unlikely to yield information that would further our knowledge of history or prehistory. It would be difficult to tie these sites to persons or events important in the history of the state or region; nor do they embody the distinctive characteristics of a type, period, region or method of construction; thus, they do not appear to be eligible resources. However, since these resources have not been formally assessed and access permission to conduct testing has not been granted by the landowner, they are considered potentially eligible and impacts are considered **potentially significant** until further evaluation.

The Amberwood Avenue Property (P-19-190501) consists of foundations dating to the 1960s and open space. It was previously assessed as not eligible.

A shell scatter, JWPCP-S-001, would be impacted by the construction activities within the Joint Treatment Site. This resource consists of a large, dispersed shell scatter located within a previously disturbed area, covering much of the eastern half of the Joint Treatment Site survey area. This site, which measures approximately 435 meters (1,425 feet) by 185 meters (605 feet) and covers 10 acres, appears to be a secondary deposit and has been subject to a great deal of disturbance; the shell is surficial and appears to be in imported fill. Thus, although no site testing has been conducted, this resource is recommended as not eligible for listing in the NRHP or CRHR. Impacts are therefore considered **less than significant**.

Woodland Farm (P-19-004079) is a built environment resource consisting of a complex of structures, foundations, and ranches dating to the 1950s and 1960s. This resource has been assessed as not eligible for the NRHP or CRHR. Impacts are therefore considered **less than significant**.

The Santa Fe Dam and Flood Control Basin (P-19-192850) was previously recommended eligible for listing in the NRHP and CRHR under Criteria A/1: Conservation for its "association with the development of the Los Angeles County Drainage Area flood control system" and under Criteria C/3: Engineering "as one of the largest compacted earth fill gravity dams, by volume, in the United States." The resource consists of the Santa Fe Dam, reservoir, spillway, associated channels and levees, embankment, intake/outlet works, control building, service building, access gallery, silting basin, spreading grounds, and county weights and measures yard. Construction of the backbone pipeline would involve trenching and backfilling within a narrow strip along the west boundary of the earthen spillway, as well as within the spreading grounds. The spreading grounds are not a contributing element to the significance of this resource, and they are regularly affected by their continued use. Pure Water would not result in changes to the use of the spillway nor its historic character. When completed, the earthen nature would remain and appear unchanged. Neither the dam itself nor any other associated features that are contributing elements to the resource (embankment, control house, float control building, service gallery, emergency spillway, and intake/outlet works) would be affected. Thus, Pure Water would not cause a substantial adverse change to the significance of the resource under the criteria for which it is eligible (Criterion A/1, associations, and Criterion C/3, architectural design). As such, impacts to the Santa Fe Dam and Flood Control Basin would be **less than significant**.

5.3.5.2 Topic 2: Archaeological Resources

Would Pure Water cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Program-Level Analysis

As discussed in Section 5.3.1.4, 11 archaeological resources have been recorded within a 500-foot radius of the Joint Treatment Site and backbone alignment, including 6 previously recorded sites and 5 historic-era refuse scatters and dumps newly identified during the field survey. While at least four of these 11 resources have been assessed as not NRHP- or CRHR-eligible, the status of any of these resources as unique archaeological sites, as defined in CEQA (PRC Section 21083.2), is not readily available and may not have been addressed in past analyses. Additionally, because the locations of other Pure Water facilities and components have not yet been defined, recorded resources may occur in their vicinity, which would be determined once specific facility location information is known. In addition, the Pure Water area is sensitive for cultural resources based on the past uses of the area, both in the pre-contact period and historic period. Thus, there is also the potential for other resources that have not yet been

recorded to be identified during surveys that would be conducted for Pure Water components once their locations are known. If such resources are identified, they would be evaluated and could be determined to be unique archaeological resources if they meet the applicable criteria.

Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance, have the potential to affect both previously identified archaeological resources, as well as those that have not yet been identified. Potential impacts associated with the project-level components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water components are unknown at this stage of program design, there is potential for these components to be sited within or adjacent to archaeological resources, which could cause a substantial adverse change in the significance of such resources (i.e., a significant effect under CEQA). Once the specific locations of these Pure Water components are determined, the potential for impacts to archaeological resources in and adjacent to those locations will be evaluated in accordance with CEQA tiering requirements. Because construction activities could affect identified archaeological resources and/or buried, unidentified archaeological resources, impacts are considered **potentially significant**.

Project-Level Analysis

As discussed above under Topic 1 (Historical Resources) in Section 5.3.5.1, seven recorded archaeological resources, including a debris dump, four refuse scatters, a shell scatter, and the Amberwood Avenue property, would be impacted by construction of the backbone pipeline and Joint Treatment Site; two previously recorded archaeological sites, identified above in **Table 5.3-1**, would not be subject to impacts, as they are in areas scheduled for tunneling. As described in that discussion, the debris dump, two of the refuse scatters, and the Amberwood Avenue property have been evaluated and determined not eligible for the NRHP or CRHR. In addition, a newly identified shell scatter is recommended as not eligible, as it appears to be a surficial secondary deposit that is highly disturbed. Although the site records for these resources do not specifically address whether they are unique archaeological resources as defined in CEQA (PRC Section 21083.2), the information provided regarding these sites indicates that none of them meets the criteria for unique archaeological resources. Therefore, impacts to these resources are not considered significant. Impacts to two newly recorded and not yet evaluated historic refuse scatters are considered **potentially significant** until further evaluation.

In addition, as previously noted, there is also the potential for currently unknown, buried archaeological resources to exist in other areas along the backbone alignment. Because construction activities could affect identified archaeological resources and/or buried, unidentified archaeological resources, impacts are considered **potentially significant**.

5.3.5.3 Topic 3: Human Remains

Would Pure Water disturb any human remains, including those interred outside of dedicated cemeteries?

Program-Level Analysis

Pursuant to CEQA Guidelines Section 15064.5, a project must be evaluated for its potential to disturb any human remains, including those interred outside of formal cemeteries. A project that would have an adverse impact (direct, indirect, or cumulative) on human remains as defined by this guideline would be considered a significant impact. Human remains and burials have occurred outside of formal cemeteries

in the Pure Water area, usually associated with archaeological resource sites and pre-contact people. As such, the potential exists for unknown burials to be present where Pure Water facilities and components would be sited. Ground-disturbing activities associated with the implementation of Pure Water could have the potential to disturb human remains.

In accordance with California Health and Safety Code Section 7050.5, if human remains are discovered during construction activities, excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains would be halted until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner would notify the NAHC within 24 hours of this identification. In accordance with PRC Section 5097.98, the NAHC would then immediately notify those persons that it believes to be descended from the deceased (i.e., the MLD). With permission of the landowner or an authorized representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD would provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site. Through compliance with California Health and Safety Code Section 7050.5 and PRC Section 5097.98, impacts to human remains would be **less than significant**.

Project-Level Analysis

A site where human remains have previously been encountered during excavation activities is located in the vicinity of the backbone alignment, but outside of the 500-foot record search buffer. The location of these remains, as recorded, would not be impacted by construction at the Joint Treatment Site nor intersected by the backbone pipeline. Human remains could also be encountered during construction of other project-level components. Should human remains be encountered, treatment would be consistent with the legal requirements described above in the *Program-Level Analysis*. Through this compliance, impacts would be **less than significant**.

5.3.6 Level of Significance Before Mitigation

Potential impacts to historical resources and archaeological resources are considered **significant before mitigation**. Potential impacts to human remains are considered **less than significant** based on compliance with the applicable regulatory requirements.

5.3.7 Mitigation Measures

The following mitigation measures would be required to address potentially significant impacts associated with historical and archaeological resources.

CUL-MM-1 **Qualified Archaeologist and Architectural Historian.** Metropolitan shall retain a qualified archaeologist meeting professional standards as defined by the Secretary of the Interior to oversee all aspects of archaeological resource monitoring and treatment as the designated Project Archaeologist. Metropolitan shall also retain a qualified architectural historian meeting professional standards as defined by the Secretary of the Interior to oversee all aspects of built environment resource monitoring and treatment.

CUL-MM-2 **Resource Eligibility Determination.** Resources that have not been formally evaluated for significance and that may be disturbed during construction shall be assessed for National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) eligibility. Evaluation for NRHP and CRHR eligibility includes documentation on a State Department of Parks and Recreation form by a qualified archaeologist or architectural historian, as applicable. If found eligible, additional measures, such as Historic American Engineering Record documentation and a data recovery at the archaeological sites, shall be implemented in accordance with CUL-MM-3. Any resource considered eligible for NRHP and CRHR listing shall be considered significant.

CUL-MM-3 **Cultural Resources Monitoring and Treatment.** The Project Archaeologist, in conjunction with Metropolitan, shall implement cultural resource monitoring and treatment tailored to Pure Water. Cultural resource monitoring and treatment shall address the disposition plans for any cultural material (e.g., cultural features and artifacts) inadvertently discovered during construction activities. Cultural resource monitoring and treatment shall include archaeological monitoring for ground-disturbing activities in areas of moderate to high sensitivity for the presence of buried cultural resources, testing to evaluate the significance of archaeological resources inadvertently discovered, and specific resource-type treatment. Components for archaeological monitoring and treatment are specified below:

Archaeological monitoring shall be implemented under the direction of the Project Archaeologist to monitor all ground-disturbing activities, including clearing/grubbing, excavation, and trenching activities, in areas designated as moderate to highly sensitive for buried cultural resources. In areas that are found to be subject to past disturbance to the degree that cultural deposits would not be anticipated or due to soil/geological age, monitoring would be reduced or halted. Archaeological monitoring is not required for areas designated as low sensitivity.

Should an inadvertent discovery of an archaeological resource occur during construction, Metropolitan's Project Archaeologist shall develop an archaeological testing plan to assess the inadvertent discovery for significance and, if applicable, prepare and implement a treatment plan. If the potentially significant cultural resource is also determined to be a Tribal Cultural Resource (TCR), the procedures in TCR-MM-3 shall be followed.

The testing plan shall describe the methods to be used to evaluate the inadvertent find and shall comply with CUL-MM-2. The treatment plan developed for any significant resource may include one or more of the following: avoidance and preservation; protection such as capping; data recovery; analysis; interpretation; curation; documentation; reparation, rehabilitation, or restoration of the affected environment; methods and protocols for all treatment efforts and the disposition of artifacts; and/or the implementation of off-site mitigation.

Upon completing archaeological testing or other treatment activities, the Project Archaeologist shall prepare a technical report to document the results. The technical report shall include the methods and procedures utilized for testing and/or treatment

efforts, document the disposition of artifacts, and record all resources on the appropriate California Department of Parks and Recreation forms. The Project Archaeologist shall submit all project-related reports and California Department of Parks and Recreation forms to the appropriate Information Center via the California Historical Resources Information System.

Should built environment resources be encountered that have not been previously evaluated, including resources that have reached eligible age for listing on the NRHP or CRHR during the life of the program, the measures specified in CUL-MM-2 shall be implemented. If found eligible, impacts to these resources would be considered significant, and appropriate measures, such as Historic American Engineering Record documentation and/or appropriate treatment measures as determined by a qualified architectural historian, shall be implemented.

CUL-MM-4 **Resource Discovery Protocol.** If an archaeological resource is encountered during construction activities, the contractor shall not disturb the resource and shall immediately cease all work within 100 feet of the discovery, notify Metropolitan's construction manager, and protect the discovery area, as directed by the construction manager. The Project Archaeologist shall assess the significance of the discovery per CUL-MM-2 and CUL-MM-3, and the Metropolitan construction manager, in consultation with the Project Archaeologist, shall designate an area surrounding the discovery as restricted. The contractor shall not enter or work in the restricted area until treatment of the discovery is complete and the construction manager provides authorization.

5.3.8 Level of Significance After Mitigation

As described above, impacts to human remains would be **less than significant without mitigation.** Despite implementation of the above mitigation measures, because it is currently uncertain whether all impacts to historical and archaeological resources would be feasible to avoid, impacts to historical and archaeological resources are considered to be **significant and unavoidable**.

5.3.9 References

HELIX Environmental Planning, Inc. 2025. Cultural Resources Survey and Impact Assessment for the Pure Water Southern California Project. April.

Van Wormer, Stephen R. 2015. Department of Parks and Recreation Site Record for the Santa Fe Dam/Flood Control Basin. Form on file at the South Central Coastal Information Center, California State University, Fullerton.

Whitter, City of. 2021. Envision Whitter General Plan. Adopted October 12. Available at: https://www.cityofwhittier.org/government/community-development/planning-services/general-plan.

5.4 ENERGY

This section addresses the potential energy impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

ENERGY LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	Yes
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared for the Joint Treatment Site and backbone conveyance system (HELIX 2025; Appendix B).

5.4.1 Existing Conditions

5.4.1.1 Units of Measure

The units of energy used in this section are the British thermal units (Btu), kilowatt hours (kWh),[1] and gallons. A Btu is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. Because the other units of energy can all be converted into equivalent Btu, the Btu is used as the basis for comparing energy consumption associated with different resources. A kWh is a unit of electrical energy, and one kWh is equivalent to approximately 3,413 Btu, taking into account initial conversion losses (i.e., from one type of energy, such as chemical, to another type of energy, such as mechanical) and transmission losses. One gallon of gasoline, diesel, and natural gas is

[1] Kilowatt hour is the most commonly used measure of electrical consumption; however, due to the scope of this analysis, gigawatt hour (GWh; equivalent to one million kWh) is also used.

equivalent to approximately 124,000 Btu, 139,000 Btu, and 138,700 Btu, respectively, taking into account energy consumed in the refining process.

5.4.1.2 State Energy Supply

Electricity

California's electricity needs are satisfied by a variety of entities, including investor-owned utilities, publicly owned utilities, and electric service providers. As of 2023, California electricity demand totaled 281,140 gigawatt hours (GWh). In-state generating facilities accounted for about 215,623 GWh, or approximately 77 percent of the total electric power used in the state, with the remaining electricity coming from out-of-state imports (California Energy Commission 2025a).

Natural Gas

Natural gas continues to play an important and varied role in California. Natural gas is used for everything from generating electricity to cooking and space heating to an alternative transportation fuel. In 2012, total natural gas demand in California for industrial, residential, commercial, and electric power generation was 2,313 billion cubic feet per year. At that time, nearly 45 percent of the natural gas burned in California was used for electricity generation, and the remainder was consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors (California Energy Commission 2025b).

Transportation Fuels

Most automobiles and trucks consume gasoline and diesel fuel, which are nonrenewable energy products derived from crude oil. In addition to energy consumption associated with on-road vehicle use, energy is consumed in connection with construction and maintenance of transportation infrastructure. Passenger cars and light-duty trucks are by far the largest consumers of transportation fuel. Retail sales of transportation fuel in California totaled 13.6 billion gallons of gasoline and 3 billion gallons of diesel in 2023 (California Energy Commission 2025c).

5.4.1.3 Regional Energy Supply

The primary provider of electricity in the Pure Water area is SCE. SCE is a regulated public utility that provides energy service to 15 million people across a 50,000-square-mile service area in all or part of 15 counties. In 2023, SCE delivered more than 79,000 GWh of electricity to residential, commercial, industrial, and agricultural customers (SCE 2024a). SCE's power mix in 2023 was made up of approximately 37.6 percent eligible renewable resources (SCE 2024b).

The primary provider of natural gas in the Pure Water area is Southern California Gas Company (SoCalGas). SoCalGas is the nation's largest natural gas distribution company, delivering natural gas to over 21 million consumers across a 24,000-square-mile service area that spans Central and Southern California. SoCalGas delivers 1 trillion cubic feet of natural gas annually (SoCalGas 2025).

5.4.1.4 Metropolitan's Energy Use and Supplies

Metropolitan's energy use is primarily driven by the transportation and treatment of water, with the transport of water via the CRA and the SWP accounting for the majority of energy costs and

consumption. From 2013 to 2018, 93 percent of Metropolitan's electricity costs were associated with these systems, with the remaining 7 percent supporting water treatment plants and other facilities. The energy required for CRA operations benefits from low-cost federal hydropower, while the SWP's higher energy intensity (approximately 3,300 kWh/AF compared to 2,000 kWh/AF for the CRA) and absence of federal hydropower result in higher costs (Metropolitan 2020).

Federal Hydropower and Wholesale Energy Contracts

Metropolitan's CRA operations rely heavily on hydropower from Hoover and Parker dams, secured through long-term contracts. Metropolitan is entitled to 27 percent of Hoover Dam energy and 50 percent of Parker Dam energy, which together provide zero-GHG electricity for 50 to 85 percent of CRA energy needs (Metropolitan 2020). When hydropower is insufficient to meet demand, Metropolitan procures additional electricity through the California Independent System Operator and other suppliers (Metropolitan 2020).

Renewable and Green Energy Sources

Metropolitan integrates renewable energy into its operations to offset energy demand and reduce GHG emissions. Among its renewable energy sources are 15 small hydroelectric plants with a total capacity of approximately 130 MW. These facilities generate between 138 and 525 GWh annually and are designated as renewable under California law. As renewable resources, the electricity generated comes with Renewable Energy Credits, which can be sold to third parties (e.g., electric utilities) to help them meet their own clean energy goals. Currently, Metropolitan sells the generated hydropower (with associated Renewable Energy Credits), and it is therefore not currently used to offset Metropolitan's energy demand (Metropolitan 2020).

In addition to hydropower, Metropolitan operates four solar facilities with a combined capacity of 5.5 MW. These installations are located at key sites, including Diamond Valley Lake and various WTPs, where they generate electricity to lower retail energy costs and reduce GHG emissions. Collectively, the solar facilities contribute to an annual reduction of approximately 2,000 metric tons (MT) of CO_2. Excess solar energy generated at these sites is managed through net metering and renewable energy self-generation programs, further enhancing their sustainability benefits (Metropolitan 2020).

Energy-Intensive Nature of Water Management

Water treatment and conveyance are inherently energy-intensive processes due to the physical challenges of moving large volumes of water across long distances and elevation changes. For example, pumping an acre-foot of water through the CRA requires 2 megawatt-hours of electricity. Advanced wastewater treatment and redistribution—core elements of Pure Water—also involve high energy demand, particularly when treated water must be conveyed to higher elevations (Metropolitan 2020).

To ensure uninterrupted operations, Metropolitan maintains diesel emergency generators at critical facilities, including treatment plants and pumping stations. These systems provide backup power during grid outages, safeguarding essential water supply infrastructure (Metropolitan 2020).

5.4.2 Regulatory Framework

Energy consumption is a significant source of GHG emissions. Regulations to address energy also address GHGs, and as a result, there is some overlap in the discussions in the following text and Section 5.6,

Greenhouse Gas Emissions. In addition to the federal, state, and local regulations directed at reducing GHG emissions through increased efficiencies presented in Section 5.6 (e.g., Executive Order [EO] B-55-18 [achieving carbon neutrality by 2045], SB 32 and the CARB 2022 Scoping Plan), energy efficiency regulations that have the potential to influence Pure Water are discussed below.

5.4.2.1 Federal

Energy Independence and Security Act of 2007

House of Representatives Bill 6, the federal Energy Independence and Security Act of 2007, established new standards for a few equipment types not already subjected to a standard, and updated some existing standards. Perhaps the most substantial new standard that House of Representatives Bill 6 established is for general service lighting that is being deployed in two phases. In the first phase, between 2012 and 2014, common light bulbs were required to use about 20 to 30 percent less energy than previous incandescent bulbs. The second phase required that light bulbs consume 60 percent less energy than previous incandescent bulbs by 2020; this requirement will effectively phase out the incandescent light bulb.

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 Federal Register 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

5.4.2.2 State

Renewable Energy Programs and Mandates

Section 5.6.2.2 details recent legislative initiatives of the state. These initiatives focused on increasing the generation of electricity via renewable energy sources and promoting a shift away from fossil- or carbon-based fuels as a key strategy to reduce GHG emissions, air pollution, and water use associated with the energy sector.

California Energy Plan

The California Energy Commission is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the fewest environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators.

Senate Bills 1078 (2002), 350 (2015), and 100 (2018)

SB 1078 established the California Renewables Portfolio Standard (RPS) Program and required that 20 percent of electricity retail sales be served by renewable resources by 2017. The program was accelerated in 2015 with SB 350, which mandated a 50-percent RPS by 2030. SB 350 included interim annual RPS targets with three-year compliance periods and requires 65 percent of RPS procurement to be derived from long-term contracts of 10 or more years. In 2018, SB 100 was signed into law, which again increased the RPS to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045 (California Public Utilities Commission 2025).

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60 percent RPS in 2030. Therefore, any project's reliance on nonrenewable energy sources would also be reduced.

California Green Building Standards Code (CALGreen, or Title 24 Part 11)

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. Since 2011, the CALGreen Code is mandatory for all new residential and non-residential buildings constructed in the state. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was updated in 2016 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2017. Most changes are related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. The 2019 CALGreen Code updates, which took effect on January 1, 2020, incorporate amendments to EV charging spaces, outdoor water use provisions, and clarifications. The 2022 CALGreen Code Update took effect on January 1, 2023.

California Energy Code (CCR Title 24 Part 6)

California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. It establishes minimum energy performance standards for lighting, heating, ventilation, and air conditioning, water heating, insulation, and building envelope components. Energy-efficient buildings require less electricity, natural gas, and other fuels.

5.4.2.3 Metropolitan's Programs and Policies

The Metropolitan Water District of Southern California Climate Action Plan

In May 2022, Metropolitan adopted a CAP and certified the associated EIR. The CAP establishes targets and strategies to enhance energy efficiency, reduce GHG emissions, and support sustainable water management. Strategy 5 of the CAP specifically focuses on improving energy efficiency through operational upgrades, infrastructure enhancements, and conservation initiatives. These measures align with broader regional and state energy goals.

For a detailed discussion of GHG emissions and energy-related policies, refer to Section 5.6. The CAP's energy-focused strategies guide Metropolitan's efforts to optimize energy use and reduce its carbon footprint (Metropolitan 2022).

Zero-Emission Vehicles Transition Program

California's vehicle regulations continue to drive increased efficiency and lower emissions, directly influencing employee and construction worker commutes for Pure Water. A key initiative supporting this effort is Metropolitan's Zero-Emissions Vehicle (ZEV) Transition Program, which aligns with CARB regulations, including the Advanced Clean Fleets Rule, and Metropolitan's CAP goals. Metropolitan has committed to transitioning its fleet to ZEVs wherever operationally and technologically feasible and has allocated $35 million in fiscal year 2025/2026 to accelerate ZEV fleet purchases, reducing carbon emissions and ensuring compliance with state mandates (Metropolitan 2024).

5.4.2.4 Voluntary Sustainability Frameworks

Envision Framework

Pure Water is pursuing Envision verification through the ISI, a nonprofit organization founded by the American Public Works Association, the ASCE, and the American Council of Engineering Companies. Envision is a voluntary framework and rating system that helps agencies plan, design, and deliver sustainable, resilient, and equitable infrastructure. While not a regulatory requirement, Envision supports best practices that align with California's climate and energy goals as well as Metropolitan's internal sustainability commitments.

ASCE Standard for Sustainable Infrastructure

In October 2023, ASCE published the Standard Practice for Sustainable Infrastructure, ASCE/COS 73-23. This standard provides infrastructure owners with a consistent, technically sound approach to developing and implementing sustainable solutions throughout a project's life cycle. Metropolitan intends to follow the ASCE/COS 73-23 standard where appropriate, in support of its sustainability goals and in alignment with best practices for civil infrastructure development.

5.4.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to energy. Pure Water would have a significant impact if it would:

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

This energy impact analysis evaluates the potential for Pure Water to result in the wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, including transportation-related energy, during the construction, operation, and decommissioning phases. It also considers Pure Water's size, location, orientation, equipment use, and the feasibility of incorporating energy efficiency and renewable energy features (in accordance with CEQA Guidelines Section 15126.2[b]). This analysis also

addresses whether Pure Water would conflict with or obstruct applicable plans for renewable energy and energy efficiency.

CEQA Guidelines Appendix F provides guidance for assessing potential energy impacts of projects. While Appendix F does not establish thresholds for determining significance, it identifies six key areas that should be addressed to ensure a comprehensive evaluation of energy impacts. This analysis incorporates all six areas outlined in Appendix F as follows:

1. **Project Energy Requirements**: Evaluation of energy use by amount and fuel type across all project phases, including construction, operation, maintenance, and decommissioning. Where appropriate, this includes analyzing the energy intensity of materials and processes.
2. **Effects on Energy Supplies and Capacity**: Analysis of the project's impact on local and regional energy supplies, including the need for additional capacity to meet energy demand.
3. **Peak and Base Period Demands**: Consideration of how the project may influence peak and base period electricity and energy demands.
4. **Compliance with Energy Standards**: Assessment of the project's adherence to applicable energy efficiency standards and policies, such as Title 24 and local climate action plans.
5. **Energy Resource Impacts:** Evaluation of the potential for the project to significantly affect energy resources, including the long-term availability of energy supplies.
6. **Transportation Energy Use**: Quantification and analysis of transportation-related energy requirements, including construction-related vehicle trips, operational transportation demands, and the potential for incorporating efficient transportation alternatives.

The analysis quantifies energy use, including electricity, natural gas, and fuel consumption associated with construction and operational activities. It also evaluates the feasibility of incorporating renewable energy features into Pure Water, as well as the project's compliance with applicable energy efficiency standards and policies, including Metropolitan's CAP.

Finally, and as permitted by CEQA Guidelines Section 15126.2(b), cross-references to the Air Quality, Greenhouse Gas Emissions, and Transportation sections of the EIR are included where relevant to provide a comprehensive evaluation.

5.4.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation; however, to remain conservative, GHG-EC-1 through GHG-EC-3 were not quantified in the calculations presented in Section 5.4.5.

AQ-EC-1 **Diesel Engine Idling**. Idling for a vehicle's primary diesel engine shall be restricted to five minutes or less at any location, except as allowed by California Air Resources Board (CARB) regulation: Title 13 CCR, Division 3, Chapter 10, Section 2485.

GHG-EC-1 **Onsite Renewable Energy.** Metropolitan shall install photovoltaic solar panels with a total power rating of at least 1.5 megawatts at the Joint Treatment Site.

GHG-EC-2 **Electric Vehicle Charging.** Metropolitan shall install 100 Level 2 electric vehicle chargers at the Joint Treatment Site.

GHG-EC-3 **Energy Recovery.** Metropolitan shall install inter-stage pumps in the reverse osmosis system to reduce energy use. Metropolitan shall also install Energy Recovery Devices on the concentrate pumping systems to recover energy.

5.4.5 Impact Analysis

5.4.5.1 Topic 1: Energy Consumption

Would Pure Water result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Program-Level Analysis

The level of detail provided in this analysis corresponds to the specificity of the project description. Given the programmatic nature of portions of Pure Water, the available information does not support precise energy use calculations. As a result, a quantitative assessment of those Pure Water components would be speculative and is not provided. Instead, this analysis relies on a qualitative approach (CEQA Guidelines Sections 15064.4, 15146, 15145, 15004). To ensure a meaningful environmental assessment, each subsequent discretionary action evaluated under this EIR will be subject to additional review, as may be required by CEQA. These future analyses will incorporate more detailed, site-specific evaluations as project designs are refined and additional data become available.

Construction

Construction of Pure Water would occur in two phases: Phase 1 (2027–2035) and Phase 2 (2035–2040). Energy demand during these phases would vary based on the specific activities involved, including site preparation, excavation, pipeline installation, and facility construction. The primary source of energy consumption during construction would be diesel fuel, which would power heavy equipment such as bulldozers, cranes, and excavators. Additionally, gasoline and diesel would be consumed by transportation-related activities, including construction worker commutes, vendor deliveries, and haul trucks.

Because gasoline and diesel fuel would be a major component of construction costs, contractors and equipment operators would implement measures to minimize fuel consumption while maintaining efficiency. For example, **AQ-EC-1** imposes onsite idling restrictions to reduce unnecessary fuel use.

Adherence to state and local energy efficiency regulations (as listed in Section 5.4.2), combined with advancements in construction equipment and vehicle technology (i.e., fleet turnover), would promote energy-efficient construction practices. Additionally, Metropolitan intends to seek Envision verification for Pure Water, which supports the integration of best practices for construction-related energy efficiency and construction sustainability planning. As such, energy use associated with the construction of Pure Water would not be wasteful, inefficient, or unnecessary. Impacts would be **less than significant.**

Operation

The primary source of energy during operation would be electricity. A smaller portion of the total energy use would result from vehicle trips associated with employee commutes and deliveries, which would primarily rely on gasoline and diesel fuels. However, compliance with state-level clean vehicle standards, such as the Advanced Clean Fleets Rule, and Metropolitan's ZEV Transition Program is expected to gradually reduce reliance on fossil fuels.

Additionally, Pure Water is designed to minimize energy consumption through integrated sustainability measures. As outlined in Section 5.6, Metropolitan would install onsite photovoltaic panels (**GHG-EC-1**) to generate renewable energy, reducing dependence on grid electricity. Pure Water would also comply with Metropolitan's CAP by staying within its carbon budget and implementing key GHG reduction measures. These include installing EV charging stations (**GHG-EC-2**), utilizing alternative-fueled vehicles (**AQ-EC-2**), integrating energy-efficient RO technology (**GHG-EC-3**), and employing an advanced water purification system to decrease reliance on imported water. Additionally, Metropolitan's commitment to sustainable commuting programs, such as transit subsidies and carpool incentives, would reduce the number of vehicle trips generated and the associated use of non-electrical energy. Pure Water's pursuit of Envision verification further reinforces these operational commitments by promoting lifecycle energy efficiency and aligning with industry best practices for sustainable infrastructure. Collectively, these measures would enhance Pure Water's energy efficiency and lower overall energy consumption. Beyond its direct energy efficiency benefits, Pure Water would provide a new, sustainable water supply by harvesting the region's largest untapped source of treated wastewater. By reducing dependence on imported water, Pure Water would strengthen Metropolitan's operational resilience, reliability, and flexibility in response to long-term drought, climate change, and potential disruptions to imported water supplies. This diversification of Southern California's water portfolio aligns with regional sustainability goals, ensuring a more reliable and climate-resilient water supply for the future.

Given these considerations, operational energy use would not be wasteful, inefficient, or unnecessary. Impacts would be **less than significant.**

Decommissioning

Pure Water is a long-term initiative designed as a permanent infrastructure facility. Given its intended longevity, decommissioning is not anticipated in the foreseeable future, and energy expenditures associated with decommissioning are not expected. As such, **no impact** related to decommissioning would occur.

Project-Level Analysis

This project-level analysis addresses potential energy consumption during both construction and operation, with the specific analysis methodologies discussed below. Energy usage was calculated using CalEEMod, the CARB OFFROAD Emissions Inventory, and the CARB EMFAC Emissions Inventory. The discussion and analysis in this section related to the components analyzed at the project level are based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared for the Joint Treatment Site and backbone conveyance system (HELIX 2025; Appendix B). Refer to Appendix B of this Draft EIR for detailed energy calculations.

Construction

Joint Treatment Site

Construction at the Joint Treatment Site would require the use of onsite heavy-duty construction equipment (i.e., off-road fuel consumption) and fuel consumption from construction worker, vendor, and delivery/haul trucks (i.e., on-road fuel consumption). Construction would generally encompass clearing, demolition of existing structures and pavements, hazardous soils removal, excavation, above-grade construction, and paving.

Electricity Consumption

Off-road construction equipment would primarily be diesel-powered and is discussed in the Transportation Fuel Consumption subsection below. Electricity for electrically powered equipment (e.g., ventilation fans, dewatering pumps) and facilities (e.g., construction trailers) would be supplied by diesel generators located onsite. Energy use associated with these generators also is considered in the analysis of Transportation Fuel Consumption. While there is potential for some electrically powered equipment and facilities to be connected to the grid instead of to onsite generators, the extent to which this would occur and the associated amount of energy use are speculative and not quantified herein. However, the overall amount of energy consumed by electrically powered equipment would be similar regardless of whether generators or grid power are used.

On-road electricity consumption would occur from the use of electric vehicles, but the amount of electricity required during construction is expected to be minimal, estimated at 12,575 kWh. Electric vehicles are inherently more energy-efficient than conventional fuel-powered vehicles, further reducing overall energy demand.

Natural Gas Consumption

Off-road natural gas use is not anticipated during construction, as construction equipment would primarily operate on diesel and gasoline, as discussed in the Transportation Fuel Consumption subsection below. However, a minor amount of on-road natural gas use is expected from natural gas-powered vehicles during construction. For construction at the Joint Treatment Site, total natural gas consumption is estimated to be approximately 1,295 gallons. Natural gas is generally more energy-efficient and produces fewer emissions compared to petroleum-based fuels, contributing to cleaner operations.

Transportation Fuel Consumption

The primary source of energy consumption during construction would be petroleum-based fuels associated with the use of off-road construction vehicles and equipment, construction worker travel, and delivery and haul truck trips. Fuel consumption from onsite heavy-duty construction equipment (off-road fuel consumption) was calculated based on equipment mix, equipment usage, and consumption factors in terms of gallons per hp-hour from OFFROAD2021-Emissions Inventory.

Fuel consumption from construction worker, vendor, and delivery/haul trucks (on-road fuel consumption) was calculated based on trip rates and distances provided by Metropolitan. Total VMT was calculated for each type of construction-related trip and multiplied by the corresponding county-specific factor in gallons per VMT using CARB's EMFAC2021 Web Database. Consistent with CalEEMod,

construction worker trips were assumed to include light-duty automobiles and light-duty trucks, construction vendor trucks were assumed to include medium-duty and heavy-duty trucks, and haul trucks were assumed to be heavy-duty trucks.

Off-road fuel consumption associated with construction equipment is estimated at 281,454 gallons of diesel for the Joint Treatment Site, equivalent to 39,122,133 thousand British thermal units (kBtu). On-road fuel consumption associated with construction worker commutes, vendor trips, and delivery/haul trucks is estimated at 29,076 gallons of diesel and 20,471 gallons of gasoline, equivalent to 6,788,587 kBtu.

Backbone Conveyance System

Construction of the backbone pipeline would include open trenching and tunneling methods, which would generally involve site preparation, excavation, pipe installation, backfilling, and repaving (where required). For the pump stations, development of the Whittier Narrows Pump Station and Santa Fe Pump Station would involve the purchase of properties. If the properties include existing development, demolition of the structures would be required as the initial construction activity. Subsequent construction activities at the pump station sites would include site preparation, structural excavation, trenching for pipes, grading, structure construction, paving, and architectural coatings. Construction would also involve the installation of offsite pipelines to connect the pump station facilities to the backbone pipeline. Similarly, if the electrical substation is located offsite from the pump station, installation of electrical utilities, likely through new easements, would be required to connect the substation to the pump station facilities.

Electricity Consumption

Off-road construction equipment would primarily be diesel-powered and is discussed in the Transportation Fuel Consumption subsection below. Electricity for electrically powered equipment (e.g., ventilation fans, dewatering pumps, tunnel boring machines) would be supplied by diesel generators located onsite. Energy use associated with these generators also is considered in the analysis of Transportation Fuel Consumption. While there is potential for some electrically powered equipment to be connected to the grid instead of to onsite generators, the extent to which this would occur and the associated amount of energy use are speculative and not quantified herein. However, the overall amount of energy consumed by electrically powered equipment would be similar regardless of whether generators or grid power are used.

On-road electricity consumption would occur from the use of electric vehicles; however, the overall electricity demand during construction is expected to be minimal. Estimated electricity consumption includes 3,071 kWh for the Whittier Narrows Pump Station, 3,034 kWh for the Santa Fe Pump Station, and 458,319 kWh for backbone pipeline construction. Electric vehicles are inherently more energy-efficient than conventional fuel-powered vehicles, further reducing overall energy demand.

Natural Gas Consumption

Off-road natural gas use is not anticipated during construction, as construction equipment would primarily operate on diesel and gasoline, as discussed in the Transportation Fuel Consumption subsection below. However, on-road natural gas use is expected from natural gas-powered vehicles during construction. Estimated natural gas consumption includes 433 gallons for the Whittier Narrows Pump Station, 424 gallons for the Santa Fe Pump Station, and 42,473 gallons for the backbone pipeline.

Natural gas is generally more energy-efficient and produces fewer emissions compared to petroleum-based fuels, contributing to cleaner operations.

Transportation Fuel Consumption

As mentioned above, the primary source of energy consumption during construction would be petroleum-based fuels associated with the use of off-road construction vehicles and equipment, construction worker travel, and delivery and haul truck trips. Off-road fuel consumption associated with construction equipment is estimated at 23,843 gallons of diesel for the Whittier Narrows Pump Station, 23,835 gallons of diesel for the Santa Fe Pump Station, and 4,903,647 gallons of diesel for the backbone pipeline, equivalent to 688,234,269 kBtu. On-road fuel consumption associated with construction worker commutes, vendor trips, and delivery/haul trucks is estimated at 9,714 gallons of diesel and 5,184 gallons of gasoline for the Whittier Narrows Pump Station, 9,519 gallons of diesel and 5,116 gallons of gasoline for the Santa Fe Pump Station, and 953,852 gallons of diesel and 738,619 gallons of gasoline for the backbone pipeline, equivalent to 235,211,561 kBtu. These fuel consumption estimates reflect standard construction practices (e.g., equipment would be appropriately sized, engines would be turned off when not in use to limit idling time, equipment would be properly maintained) and are consistent with similar infrastructure projects.

Summary of Total Construction Energy Use

The combined estimated energy use from constructing facilities at the Joint Treatment Site, backbone pipeline, and backbone pump stations—including both off-road and on-road fuel consumption—amounts to 969,878,173 kBtu, as shown in **Table 5.4-1.**

Table 5.4-1
TOTAL CONSTRUCTION ENERGY USE

Program Component	Electricity (kWh)	Natural Gas (gallons)	Diesel (gallons)	Gasoline (gallons)	Total kBtu
Joint Treatment Site	12,575	1,295	310,530	20,471	45,924,590
Backbone Pipeline	458,319	42,473	5,857,499	738,619	913,235,970
Whittier Narrows Pump Station	3,071	433	33,557	5,184	5,377,818
Santa Fe Pump Station	3,034	424	33,354	5,116	5,339,796
Total	**476,999**	**44,625**	**6,234,941**	**769,390**	**969,878,173**

kWh = kilowatt hours; kBtu = thousand British thermal units

Operation

The primary energy uses for Pure Water operations would be associated with water purification and pumping purified water from the Joint Treatment Site through the backbone pipeline to various distribution locations. Unlike the existing wastewater collection system, which is largely gravity-fed, the distribution of purified water from the Pure Water facility would require significant energy input to pump water "uphill" to offsite use locations.

Joint Treatment Site

Operational activities associated with the Joint Treatment Site would include facility and equipment operations and maintenance, chemical storage and management, water quality monitoring, and daily deliveries of treatment chemicals. The fully built-out facility, including DPR components, would require

194 staff, including administrative, operations, maintenance, process controls, chemistry, and public outreach personnel. In addition to operational staff, the visitor center at the AWP Facility is anticipated to receive up to 40 (with an average of 10) visitors per day, consisting mainly of community and school groups, and the Workforce Training Center is anticipated to serve approximately 31 trainees per day. On average, 31 chemical deliveries would occur per day.

Electricity Consumption

The operation of facilities at the Joint Treatment Site would require substantial electricity due to the intensive processes involved in treating wastewater and distributing purified water across the region. Electricity is essential for powering treatment equipment and systems, as well as for pumping water through the backbone pipeline to various receiving locations. In addition to these primary energy demands, Joint Treatment Site operations would also require electricity to support onsite ancillary facilities, vehicle use, and other operational needs.

The Joint Treatment Site would contain multiple components related to treatment and distribution throughout the site that would consume energy, including, but not limited to, the influent pump station, UV/AOP system, MBR, odor control facility for MBR and influent pump station, sidestream centrate treatment system, ozone facility, BAC facility, RO facility, and pump station. Operational equipment within the MBR would include pumps, mixers, and blowers. The ozone facility would require a generator and pumps, and the BAC would contain outdoor pumps and blowers. The RO facility involves multiple pumps on a large site in the center of the AWP Facility. Six large effluent pumps (five duty and one standby) would be required for the pump station. In addition to components related to treatment and distribution, ancillary facilities and the Workforce Training Center would require electricity for operations. Annual electricity consumption estimates were provided by the engineering team based on equipment load. At full buildout, the Joint Treatment Site's electricity consumption is projected to be 464,223,000 kWh, equivalent to 1,583,994,796 kBtu. Approximately 307,601 kWh would also be consumed annually in association with electric vehicles traveling to and from the Joint Treatment Site.

The Joint Treatment Site's electricity demand would be supplied by SCE, necessitating the construction of two new 66-kV transmission lines to connect the two new substations to the regional grid. While the regional grid has sufficient energy capacity to supply the needs of Pure Water's Joint Treatment Site, the sizing of the existing transmission infrastructure is inadequate to deliver the necessary power to the site. To address this limitation, two new electrical substations would be constructed on the eastern side of the AWP Facility, along with the required transmission infrastructure, to ensure reliable power delivery without straining existing systems.

Metropolitan has been coordinating with SCE to ensure adequate energy supply and transmission capacity. Voltage drops or power reliability concerns resulting from Pure Water's operations are not anticipated. The facility would also integrate renewable energy sources as part of its sustainability measures. Specifically, **GHG-EC-1** requires Metropolitan to install photovoltaic solar panels with a total power rating of at least 1.5 MW at the Joint Treatment Site, reducing reliance on external power sources.

To maintain operational resilience, the facility would include up to eight 4-MW backup generators to ensure continuous functionality in the event of power outages or grid disruptions. While no foreseeable outages or grid disruptions are anticipated, these backup systems have been incorporated as a precautionary measure to ensure uninterrupted operations under any unexpected circumstances. The

generators combined are estimated to consume up to 37,176 gallons of diesel or 5,167,467 kBtu per year for testing. To improve energy efficiency and reduce reliance on diesel fuel, the facility would also integrate two 2-MW battery packs that would be placed next to the generators and connected to new solar panels for power supply. Solar panels would be installed on the facility rooftops and parking canopies, with battery storage used during nighttime hours or periods of low solar generation, reducing the facility's overall fuel consumption.

The planned infrastructure improvements, including the new substations and transmission line, would ensure the facility's power needs are met efficiently and reliably.

Natural Gas Consumption

Off-road natural gas use is not anticipated during operation of the AWP Facility. However, on-road natural gas use is expected from natural gas-powered vehicles during operation from delivery of chemicals and CO_2. The annual natural gas consumption is estimated to be 1,677 gallons. Natural gas is generally more energy-efficient and produces fewer emissions compared to petroleum-based fuels, contributing to cleaner operations.

Transportation Fuel Consumption

Operational transportation fuel consumption would be associated with employee commutes, visitor travel, and chemical deliveries. Fuel consumption from chemical deliveries and worker and visitor commutes was calculated using the trip rates and distances provided by Metropolitan. Total VMT was then calculated for each type of operation-related trip and multiplied by the corresponding county-specific factor in gallons per VMT using CARB's EMFAC2021 Web Database. Consistent with assumptions provided by Metropolitan, employee and visitor commute trips were assumed to include light-duty automobiles and light-duty trucks, liquid chemical delivery trucks were assumed to include medium-duty trucks, and hydrated lime and CO_2 delivery trucks were assumed to be heavy-duty trucks. Operational transportation fuel consumption is estimated at 58,680 gallons of diesel and 47,667 gallons of gasoline annually. To minimize fuel consumption and emissions, Pure Water would comply with Metropolitan's ZEV Transition Program, which promotes the use of fuel-efficient vehicles and ZEVs for transportation needs. These measures would further reduce the facility's reliance on petroleum-based fuels and support a more sustainable and efficient energy strategy.

Backbone Conveyance System

Following construction, the backbone pipeline itself would not consume energy. Ongoing operations would be limited to routine inspection and maintenance activities. Operational energy use at the Santa Fe Pump Station and Whittier Narrows Pump Station would primarily result from the electricity required to power the pumps used for water conveyance, as well as from regular testing of standby generators.

Electricity Consumption

The Whittier Narrows Pump Station and Santa Fe Pump Station would require pumps between 1,000 and 4,500 hp, depending on the location, to convey purified water. Each pump station would require uninterrupted power supply. Annual electricity demand for water conveyance through the backbone conveyance system is estimated at 146,300,000 kWh, equivalent to 499,196,374 kBtu.

At the Whittier Narrows Pump Station and Santa Fe Pump Station, emergency backup generators may be installed to provide temporary power during outages. Each generator is assumed to be 175 kW and be tested for one hour per day, up to 30 days per year. The generators are estimated to consume up to 873 gallons of diesel or 121,347 kBtu a year.

Natural Gas Consumption

Off-road and on-road natural gas use is not anticipated during operation of the backbone conveyance system.

Transportation Fuel Consumption

Operation of the backbone conveyance system would involve occasional trips made by workers visiting the backbone pipeline and pump station sites for ongoing operations and maintenance; however, these light-duty vehicle trips would be minimal, thereby resulting in negligible energy impact.

Summary of Total Operation Energy Use

The combined estimated energy consumption for Pure Water operations, including both off-road and on-road fuel consumption, is 2,103,829,344 kBtu per year, as shown in **Table 5.4-2**. Of this total, electricity use alone accounts for 2,084,240,748 kBtu (approximately 99 percent), while other fuel sources such as gasoline, diesel, and natural gas contribute only a small fraction of the total energy demand. Natural gas consumption, in particular, is minimal at just 232,640 kBtu.

Table 5.4-2
ANNUAL OPERATIONAL ENERGY USE

Program Component	Electricity (kWh)	Natural Gas (gallons)	Diesel (gallons)	Gasoline (gallons)	Total kBtu
Joint Treatment Site	464,530,601	1,677	95,856	47,667	1,604,511,623
Backbone Pipeline[1]	-	-	-	-	-
Whittier Narrows Pump Station	96,200,000	-	436.5	-	328,308,734
Santa Fe Pump Station	50,100,000	-	436.5	-	171,008,988
Total	**610,830,601**	**1,677**	**96,729**	**47,667**	**2,103,829,344**

kWh = kilowatt hours; kBtu = thousand British thermal units

[1] The backbone pipeline would not consume energy during operation.

In Southern California, where significant portions of the water supply must be imported and moved over mountain ranges, energy use for conveyance is a necessity. **Table 5.4-3** presents a comparison of electricity use for different water projects.

While the table illustrates that Pure Water would have higher energy demands than Pure Water San Diego for advanced water purification alone (2,053 kWh/AF vs. 1,173 kWh/AF), this difference is justified by the nature of the treatment processes involved. Pure Water would employ DPR, which delivers purified water directly to treatment facilities without the use of an environmental buffer, necessitating a higher level of treatment and, consequently, greater energy consumption. In contrast, Pure Water San Diego utilizes IPR, which allows treated water to blend with other surface water in a reservoir before being extracted for use, reducing the immediate treatment requirements. Additionally, the overall energy demand for Pure Water, including conveyance (3,422 kWh/AF), remains comparable to or lower

than other major water supply sources such as desalination (4,503 to 4,700 kWh/AF) and SWP imports (3,280 to 3,300 kWh/AF).

Table 5.4-3
ELECTRICITY USE COMPARISON

Electricity Use	kWh/AF
Pure Water Southern California[1]	
AWP Only	2,053
AWP + conveyance	3,422
Pure Water San Diego[2,3]	
AWP Only	1,173
AWP, conveyance, water treatment, distribution, and collection system/wastewater treatment	3,617
Orange County Groundwater Replenishment System[3,4]	
AWP + conveyance	1,481
Pacific Institute Water-Energy-Climate Nexus Report[5]	
SWP Imports (conveyance)	3,280
Colorado River Imports (conveyance)	2,115
Desalination (treatment)	4,503
LACSD Energy/GHG Memo[6]	
SWP Imports (conveyance)	3,300
Colorado River Imports (conveyance)	2,000
Desalination (treatment)	4,700

AWP = advanced water purification; kWh = kilowatt hours; AF = acre-foot

1 Data developed by Metropolitan.

2 City of San Diego 2016

3 System utilizes IPR treatment

4 Orange County Water District and Orange County Sanitation District 1998

5 Pacific Institute 2021

6 Los Angeles County Sanitation Districts 2021

The estimated electricity use of Pure Water aligns with industry standards and remains within the range of comparable regional water supply projects (**Table 5.4-3**). In addition, as discussed in Section 5.6, Pure Water has been analyzed as part of Metropolitan's CAP under the Regional Recycled Water Program (Pure Water's former name), and its project-level components remain largely consistent with the assumptions in the CAP. Pure Water as a whole remains on track with Metropolitan's emissions reduction goals. Metropolitan remains within its allocated carbon budget through 2030 under all forecast scenarios and under its 2045 targets for both the low and average emissions scenarios. Even under the high emissions scenario, where the CAP projected a potential exceedance by 2045, Metropolitan has already identified and planned CAP reduction strategies sufficient to offset this exceedance.

Summary of Combined Construction and Operational Impacts

Construction and operation of Pure Water would occur simultaneously for many years and at various times and locations. **Tables 5.4-1** and **5.4-2** provide a summary of the potential construction and operational energy use associated with Pure Water. As discussed above, the combined construction and operational energy use is necessary for the implementation of critical water infrastructure and remains within industry standards. Given Pure Water's adherence to best practices in energy efficiency and compliance with regulatory energy conservation measures and environmental commitments, Pure

Water's energy use is not considered wasteful, inefficient, or unnecessary under CEQA. Instead, it would contribute to a more reliable and sustainable local water supply, reducing dependence on imported water sources that require comparable or even greater energy inputs for long-distance pumping and treatment. Impacts would be **less than significant**.

5.4.5.2 Topic 2: Conflict with Energy Plans

Would Pure Water conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Program-Level Analysis

SB 100 established the current overarching renewable energy-related policy in California. It requires that 100 percent of electric retail sales be supplied by renewable energy by 2045. California's RPS Program is the primary mechanism by which SB 100 is implemented at the statewide level. The RPS, which is implemented by the California Public Utilities Commission and the California Energy Commission, requires electricity providers to ensure that renewable energy constitutes a specified minimum portion of their electric load.

The Pure Water area is serviced by SCE, whose parent company (Edison International) published a report in 2019 titled *Pathway 2045* that provides an analysis of steps that California must take to meet SB 100's 2045 goal (Edison International 2019). In September 2024, Edison International published *Reaching Net Zero*, which details SCE's plan to reach net zero GHG emissions and support the state's climate goals (Edison International 2024). Achieving net zero emissions will primarily be accomplished through SCE increasing clean power procurement and decreasing electricity generated via natural gas. Measures identified in *Reaching Net Zero* are undertaken by SCE and do not require action by customers such as Metropolitan. Pure Water would consume electricity provided by SCE and, because SCE would achieve net-zero GHG emissions in accordance with SB 100, would therefore consume carbon-free electricity by 2045. Pure Water would not conflict with or obstruct SCE's plan for achieving net-zero emissions, and would therefore also not conflict with or obstruct implementation of SB 100.

The energy-related plan directly applicable to Pure Water is Metropolitan's CAP, which identifies actions to reduce Metropolitan's carbon footprint in the face of climate change, increasing its climate resiliency and energy independence while supporting California's GHG reduction goals. Strategies directed at energy use include phasing out natural gas combustion at Metropolitan facilities, transitioning to a zero-emissions vehicle fleet, utilizing carbon-free electricity, and improving energy efficiency. As discussed in Section 5.6, Pure Water would be consistent with the CAP while also implementing several of the strategies and measures aimed at reducing non-renewable energy use, including installing photovoltaic solar panels and electric vehicle charging stations at the Joint Treatment Site. In addition, Metropolitan would expand existing commute emission reduction programs to the Joint Treatment Site, including public transit subsidies, carpool and vanpool incentives, and bike-to-work support, which would reduce the number of vehicle trips generated and the associated use of non-electrical energy. Metropolitan's pursuit of Envision verification for Pure Water, along with its intent to follow the ASCE Standard for Sustainable Infrastructure (ASCE/COS 73-23) where appropriate, further demonstrates its commitment to energy efficiency and sustainability throughout the project's lifecycle.

As such, Pure Water would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **No impact** would occur.

Project-Level Analysis

The project-level components are part of the overall Pure Water program; therefore, information and analysis presented above under *Program-Level Analysis* are also applicable to the components evaluated at the project level. No additional analysis is required.

5.4.6 Level of Significance Before Mitigation

Impacts associated with energy use are considered **less than significant**. There would be **no impact** associated with obstruction with a state or local plan for renewable energy or energy efficiency.

5.4.7 Mitigation Measures

Impacts associated with energy would be less than significant; therefore, no mitigation measures are required.

5.4.8 Level of Significance After Mitigation

Impacts associated with energy use would be **less than significant without mitigation**. There would be **no impact** associated with obstruction with a state or local plan for renewable energy or energy efficiency without mitigation.

5.4.9 References

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5.5 GEOLOGY AND SOILS

This section addresses the potential geology and soils impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts with and without mitigation. As noted at the beginning of this chapter, all potential impacts associated with the construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

GEOLOGY AND SOILS LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Geotechnical Assessment prepared for the Joint Treatment Site (Converse Consultants 2024; Appendix E1), the Preliminary Geotechnical/ Geologic Evaluation prepared for the backbone alignment (GeoPentech 2018; Appendix E2), Addendum No. 1 to the Preliminary Geotechnical/Geologic Evaluation prepared for the backbone alignment (GeoPentech 2022, revised 2024; Appendix E3), and the Paleontological Resources Assessment prepared for the Joint Treatment Site and backbone alignment (Stantec 2024; Appendix E4).

5.5.1 Existing Conditions

5.5.1.1 Geologic Setting

The Pure Water area traverses the Los Angeles Basin, which is a broad sediment-filled basin located along the northern margin of the Peninsular Ranges geomorphic province near the convergence with the Transverse Ranges geomorphic province of California. The Peninsular Ranges geomorphic province is a region characterized by northwest-trending fault-bounded mountain ranges, broad intervening valleys, and low-lying coastal plains. The Peninsular Ranges extend approximately 920 miles from the Los Angeles Basin to the southern tip of Baja California and vary in width from approximately 30 to 100

miles. Bedrock units include pre-Cretaceous igneous rocks of the Southern California Batholith overlain by younger sedimentary units that are marine through the Miocene and then slowly transition to entirely terrestrial units in the Pleistocene.

Locally, the Los Angeles Basin is a northwest-trending alluvial structural basin bounded on the north by the Santa Monica Mountains, on the east by the Elysian, Repetto, and Puente hills, and on the southeast by the Santa Ana Mountains and San Joaquin Hills. The Los Angeles Basin developed as a result of tectonic forces and the San Andreas fault zone, with subsidence occurring 18 to 3 million years ago. While sediments dating back to the Cretaceous (66 million years ago) are preserved in the basin, continuous sedimentation began in the middle Miocene (around 13 million years ago) and continues today, resulting in thousands of feet of accumulation. Most of these sediments are marine, until the sea level dropped in the Pleistocene (which began approximately 2.6 million years ago) and deposition of the alluvial sediments that compose the uppermost units in the Los Angeles Basin began.

Most of the Pure Water area is underlain by Quaternary-age alluvial and fluvial sediments that were deposited in the basin from the foot of the San Gabriel and San Bernardino mountains to the Pacific Ocean along the Los Angeles, San Gabriel, Rio Hondo, and Santa Ana rivers and their associated tributaries (**Figure 5.5-1)**. The Quaternary-age alluvial and fluvial sediments mapped in the Pure Water area are composed mainly of sand, gravel, and cobbles at the northern end of the Pure Water area with fine-grained sediments present at depths less than 20 feet; sand, silty sand, and silt in the central portion; and silty sand, silt, and clay in the southern portion.

Outcrops of Pleistocene-age and older bedrock units occur in the Puente and Montebello hills through which the backbone alignment passes. Bedrock units in the Puente and Montebello hills are composed of shale, siltstone, sandstone, pebbly sandstone, and conglomerate of the Sespe, Topanga, Puente, and Fernando formations.

5.5.1.2 Seismic Setting

The Pure Water area is in a seismically active region that will be subjected to future seismic shaking and seismically induced ground formation during earthquakes generated by any of several surrounding active faults. The backbone alignment crosses three Holocene active faults (or projections[1] thereof): the Newport-Inglewood Fault, the Whittier Fault, and the Sierra Madre Fault (refer to **Figure 5.5-2**). A Holocene active fault has exhibited surface displacement within Holocene time (within the last 11,000 years), hence constituting a potential hazard to structures located across it. The Alquist-Priolo Earthquake Fault Zoning Act, described in more detail under Section 5.5.2, requires publication of earthquake fault zone maps around the surface traces of active faults used for regulatory purposes so these areas can be avoided for future development intended for human occupancy.

The Newport-Inglewood Fault is a northwest-trending right-lateral strike-slip fault[2] with a projection that crosses the backbone alignment near where the alignment transitions from Alameda Street to Del Amo Boulevard in the City of Carson and unincorporated Los Angeles County. It is an active fault, as evidenced by the magnitude 6.3 Long Beach Earthquake of 1933. The fault is estimated to have probable

[1] Area immediately beyond the end of the mapped trace of a fault where there is some possibility that the fault may continue. It is the inferred or speculative fault location where clear geomorphic evidence of the fault is lacking.

[2] A fault on which the two blocks slide past one another, with the displacement of the far block to the right when viewed from either side.

Source: Geologic Units (California Department of Conservation)

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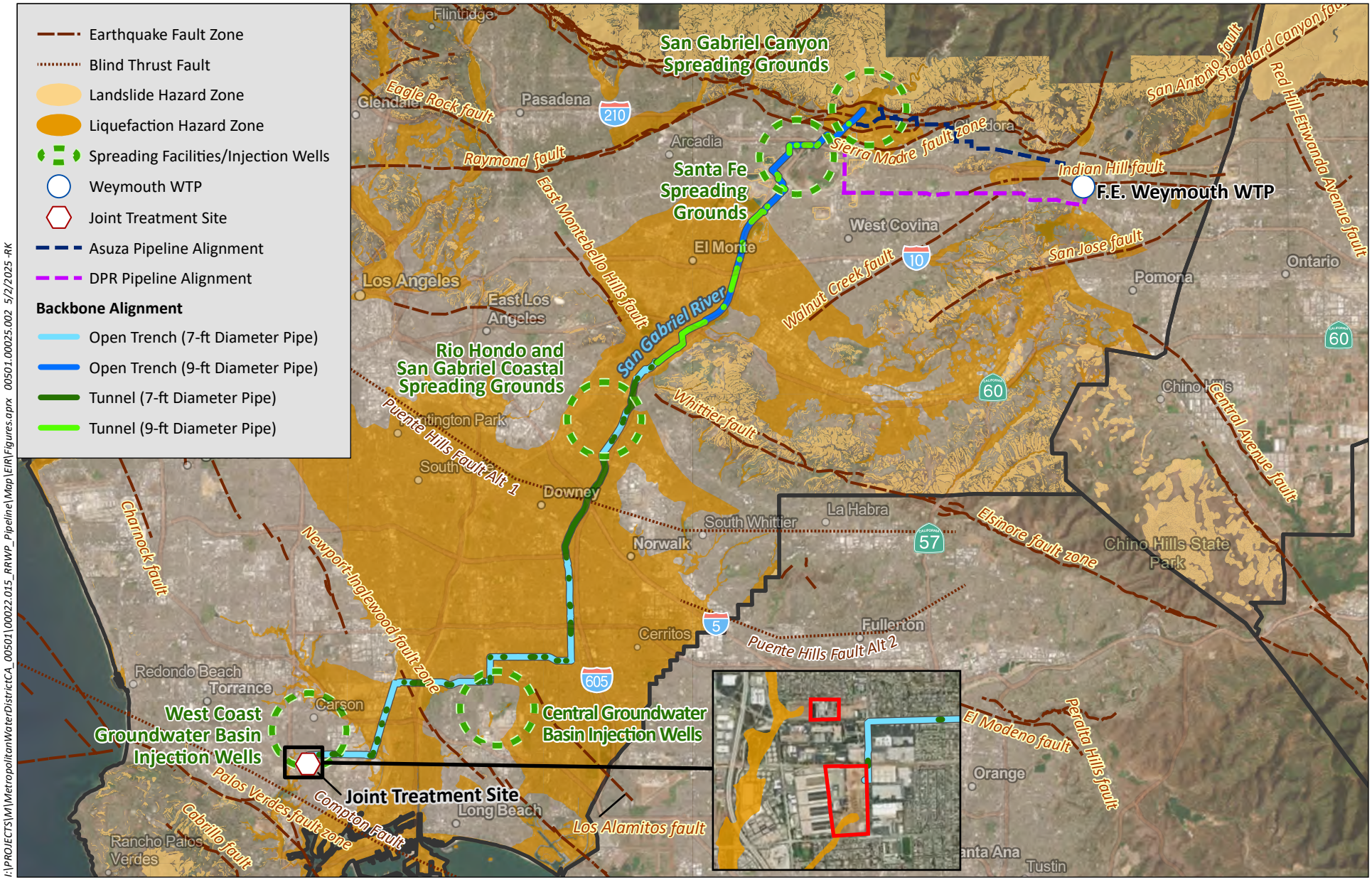
PUREWATER SOUTHERN CALIFORNIA

Geologic Units

Figure 5.5-1



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Sources: Aerial (Esri 2022); Liquefaction Zones (Los Angeles County); Landslide Zones (Los Angeles County and San Bernardino County); Faults (USGS)

PUREWATER SOUTHERN CALIFORNIA

Seismic Hazards

Figure 5.5-2

earthquake magnitudes of 6.0 to 7.4. Average displacement for the fault is estimated at approximately six feet (GeoPentech 2018). Although the backbone alignment crosses the fault, it is not within the Alquist-Priolo Earthquake Fault Zone associated with the Newport-Inglewood Fault; however, lack of a designated zone does not preclude the potential for surface rupture.

The Whittier Fault is a northwest-trending right-lateral strike-slip fault with a projection that crosses the backbone alignment in the Whittier Narrows area in the City of Pico Rivera and unincorporated Los Angeles County. Although the projection of the Whittier Fault through the Whittier Narrows is speculative due to the lack of clear geomorphic features, Holocene-aged sediments in the Whittier Narrows have likely been significantly reworked by the San Gabriel River, removing fault-related features that may have existed. At depth below the Whittier Narrows, the fault has been shown to offset Miocene/Pliocene and older sedimentary deposits. While direct evidence of Holocene fault rupture within the Whitter Narrows does not exist, there may be potential for fault offset in the area to occur as a result of a large magnitude earthquake (magnitude 7.0 or greater) on the Whittier Fault (GeoPentech 2018). Although the backbone alignment crosses the fault, it is not within the Alquist-Priolo Earthquake Fault Zone associated with the Whittier Fault; however, lack of a designated zone does not preclude the potential for surface rupture.

The Sierra Madre Fault is a northwest-trending reverse fault[3] that crosses the backbone alignment where it extends north of the Santa Fe Spreading Grounds in the City of Azusa. It is divided into five main segments, some of which are themselves complex systems of parallel and branching faults. The fault is estimated to have probable earthquake magnitudes of 6.0 to 7.0 (California Institute of Technology 2023). A portion of the backbone alignment is within the mapped Alquist-Priolo Earthquake Fault Zone associated with the Sierra Madre Fault.

In addition to these three Holocene active faults currently mapped at the surface, two blind thrust blocks, Puente Hills and Compton, cross beneath the backbone alignment. The Puente Hills blind thrust block crosses beneath the backbone alignment near the intersection of I-5 and I-605 in the City of Downey, and the Compton blind thrust block crosses beneath the backbone alignment near the Joint Treatment Site in the City of Carson. Blind thrust blocks are low angle reverse faults that have no surface rupture at the earth surface. Large earthquakes on the Puente Hills and Compton blind thrust systems are not known to rupture the surface, but distributed seismic deformation is possible, with potential for differential uplift spanning up to a few inches across a broad area (GeoPentech 2018).

No unique geological features are known to be present in the Pure Water area.

5.5.1.3 Seismic Hazards

Fault Rupture

Surface rupture occurs when movement on a fault breaks through to the surface. This rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Fault rupture almost always follows preexisting faults, which are zones of weakness. Fault rupture from fault displacement can adversely affect surface and subsurface structures and facilities. As noted above, the backbone alignment crosses the Newport-Inglewood Fault, the Whittier Fault, and the Sierra Madre Fault, which have a potential for surface rupture.

[3] A fault where one side of the fault moves up and over the other side of the fault.

Seismic Ground Shaking

Earthquakes on major faults, such as those that cross the Pure Water area as described above, can produce strong ground shaking. Ground shaking is affected by several factors including the size of the earthquake, the type of ground the earthquake waves travel through, and the distance away from the earthquake source. Seismic ground shaking can affect the integrity of surface and subsurface facilities such as structures, foundations, and utilities, either directly from vibration-related damage to rigid structures, or indirectly through associated hazards including liquefaction (as described below).

Liquefaction

Liquefaction is the phenomenon whereby soils subjected to seismic (or other) ground shaking effects exhibit a loss of shear strength and demonstrate fluid-like flow behavior due to excess pore pressure. Loose, granular (low clay/silt content) and saturated soils with relative densities of less than approximately 70 percent are most susceptible to these effects, with liquefaction potential greatest at depths of less than approximately 50 feet. Surface and near surface manifestations from these events can include loss of support for structures, foundations, pavement, and utilities; dynamic settlement (including volume reductions in dry soils); lateral spreading (i.e., horizontal displacement on sloped surfaces as a result of underlying liquefaction); and ground lurching (a permanent displacement or shift of the ground surface).

Shallow groundwater at depths of 20 feet or less is located throughout the Pure Water area, primarily within alluvial deposits. This groundwater may vary up to 10 feet between dry and wet years, and several feet seasonally (GeoPentech 2018). The shallow groundwater generally coincides with California Geological Survey (CGS) mapped Liquefaction Hazard Zones, as shown on **Figure 5.5-2**. These zones identify areas that require site-specific geotechnical investigations to be conducted to identify the hazard and formulate mitigation measures prior to permitting structures designed for human occupancy, as further described in Section 5.5.2.2.

Seismically Induced Landslides

The occurrence of landslides and other types of slope failures (e.g., rock falls and mudflows) is influenced by several factors, including slope grade, geologic and soil characteristics, moisture levels, and vegetation cover. Landslides can be triggered by a variety of potentially destabilizing conditions or events, such as fires, precipitation, grading, and seismic activity. Seismically induced landslides and rock falls could occur in a major earthquake and occur most often on steep or compromised slopes. Factors controlling the stability of slopes include: (1) slope height and steepness; (2) engineering characteristics of the earth materials comprising the slope; and (3) intensity of ground shaking. Topography in the Pure Water area is relatively level. CGS Landslide Hazard Zones are present southwest of the Joint Treatment Site, west and east of the backbone alignment in the Whittier Narrows area, and north of the backbone alignment, as shown on **Figure 5.5-2** (CGS 2021).

5.5.1.4 Geologic Instability Hazards

Subsidence

Potential hazards related to regional subsidence are typically associated with conditions such as karst/limestone terrain (i.e., the formation of subsurface cavities by dissolution of soluble rocks), subsurface mining, large-scale groundwater or oil and gas withdrawal, or decomposition of thick organic

(peat) layers. Subsidence can result in a loss of support capability within the associated soil or formational materials and/or differential settlement (different degrees of settlement over relatively short distances), potentially resulting in damage to surface and subsurface structures such as buildings, pavement, and utilities. The southwestern portion of the Pure Water area is underlain by alluvial and fluvial deposits that may be subject to subsidence.

Collapsible Soils

Surficial materials including non-engineered fill, topsoil, and alluvial deposits may be susceptible to hydro-collapse, a process in which loose, dry soils undergo rapid consolidation (collapse) when wetted. This phenomenon is most common in arid and semi-arid areas, with the associated effects generally localized but potentially substantial and including differential settlement as noted above for subsidence. The majority of the Pure Water area is underlain by alluvial and fluvial deposits that may be subject to collapse.

Expansive Soils

Expansive (or shrink-swell) behavior in soils is attributable to the water-holding capacity of clay minerals and can adversely affect the integrity of facilities such as foundations, pavement, and underground pipelines. Clay soils are known to be present under portions of the Pure Water area (GeoPentech 2022 and Converse Consultants 2023). Therefore, there is potential for encountering expansive soils.

5.5.1.5 Paleontological Setting

Paleontological resources (i.e., fossils) are evidence of ancient life. This includes the remains of the body of an organism, such as bones, skin impressions, shell, or leaves, as well as traces of an organism's activity, such as footprints or burrows, called trace fossils. In addition to the fossils themselves, geologic context is an important component of paleontological resources, and includes the stratigraphic placement of the fossil as well as the characteristics of the rock in order to assess the ecological setting at the time the fossil was formed, depositional environment, and how the fossil was formed.

It is important to note that fossils are preserved in the subsurface and are encountered when exposed by natural processes like erosion or artificial processes like construction. Therefore, it cannot be determined whether or not paleontological resources are present in any particular area until such exposure occurs. For the purposes of assessments of paleontological resource potential, paleontologists rely upon the geologic units at the surface and in the subsurface, and the potential of these units to preserve fossils, as well as the nature of these fossils and what their scientific importance might be. Significant general fossil localities in the Pure Water area, as identified in the County of Los Angeles General Plan (2022), are located in the Palos Verdes Peninsula (within the Palos Verdes Sand, San Pedro, and Monterey Shale formations) and in the Puente Hills (within the Puente formation). Specifically for project-level components, a Paleontological Resources Assessment (Stantec 2024) was prepared to assess the potential presence of paleontological resources in the paleontological study area, which comprises the Joint Treatment Site and backbone alignment. The assessment included an analysis of existing data with a museum records search from the Natural History Museum of Los Angeles County, a review of the most recent geologic mapping and relevant scientific literature, and a windshield and pedestrian field survey. This research was used to assign paleontological potential rankings to the geologic units present in the paleontological study area, either at the surface or in the subsurface. The results of this study indicate that scientifically important fossils (i.e., unique paleontological resources for the purposes of CEQA) have been recorded from some of the geologic units in the paleontological

study area, with these units assessed as having high paleontological potential. The geologic units present, and their associated paleontological potential, are described below and shown on **Figures 5.5-3a** through **5.5-3g**.

Active Sedimentary Deposits

Active sedimentary deposits, which are mapped individually as active alluvium and alluvial-fan deposits and active wash deposits, present in the paleontological study area date to the late Holocene, which ranges from the present to less than 5,000 years old. Fossils must be over 5,000 years in age, corresponding to the middle part of the Holocene. Therefore, the active sedimentary deposits are too young to preserve paleontological resources. However, these sediments likely overlie high potential units (described below) at an undetermined depth in portions of the paleontological study area.

Young Sedimentary Deposits

Young alluvium and alluvial-fan deposits present in the paleontological study area date to the Holocene, which ranges from the present to 11,700 years old. Young wash deposits in the paleontological study area date from the Holocene to the late Pleistocene, indicating they range from recent in age to as much 290,000 years old. Therefore, the upper layers of young sedimentary deposits are too young to preserve paleontological resources, but as sediments increase in age with depth, the deeper layers of these units are of an age to preserve paleontological resources. Therefore, areas mapped as young alluvium and alluvial-fan deposits and young wash deposits should be considered to have low-to-high paleontological potential, increasing with depth.

Older Alluvium and Alluvial Fan Deposits

Older alluvium and alluvial-fan deposits date from the Pleistocene, which ranges from 11,700 to 2.58 million years ago, making this unit old enough to preserve fossils. It should be noted that the "Lakewood Formation" was established as broadly including late Pleistocene-aged units from across the Los Angeles Basin, including the marine Palos Verdes Formation and terrace deposits as well as nonmarine alluvial deposits. Palos Verdes Sand and marine terrace deposits are addressed separately for the purposes of Pure Water's paleontological resources analysis, as described in the following paragraphs. Due to the abundant yield of fossils, most notably significant (e.g., diagnostic) vertebrate specimens found within the paleontological study area, documented from Pleistocene-aged terrestrial deposits such as these, areas mapped as older alluvium and alluvial fan deposits are considered to have high paleontological potential.

Marine Terrace Deposits

Marine terrace deposits range from 11,700 to 773,000 years in age, dating to the late to middle Pleistocene and making this unit old enough to preserve fossils. Due to the abundant yield of fossils, most notably significant (e.g., diagnostic) vertebrate specimens, documented from Pleistocene-aged marine deposits such as these, areas mapped as marine terrace deposits are considered to have high paleontological potential.

Palos Verdes Sand

The Palos Verdes Sand dates to the late Pleistocene, deposited approximately 130,000 years ago, making this unit old enough to preserve fossils. Palos Verdes Sand is not formally mapped in the

Joint Treatment Site

Backbone Alignment

Open Trench (7-ft Diameter Pipe)

Tunnel (7-ft Diameter Pipe)

Paleontological Sensitivity

High

Low to High, with increasing depth

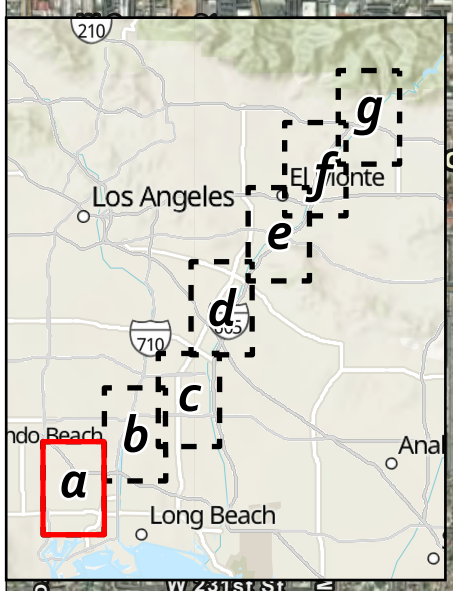
Low

Geologic Unit

Qaa: Young active alluvium and alluvial-fan deposits (late Holocene)

Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)



Source: Aerial (Esri 2021)

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PURE WATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3a

Backbone Alignment

Open Trench (7-ft Diameter Pipe)

Tunnel (7-ft Diameter Pipe)

Paleontological Sensitivity

High

Low to High, with increasing depth

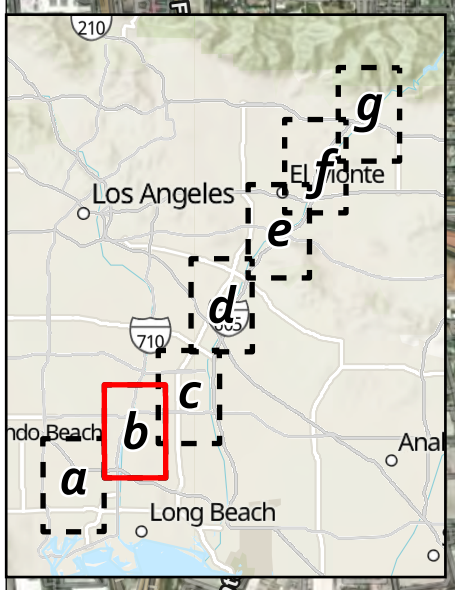
Low

Geologic Unit

Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

Qom: Old shallow marine deposits on wave-cut surface (late to middle Pleistocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)



Qya

Qom

Qoa

Source: Aerial (Esri 2021)

0 2,000 Feet

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PURE WATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3b

Backbone Alignment

Open Trench (7-ft Diameter Pipe)

Tunnel (7-ft Diameter Pipe)

Paleontological Sensitivity

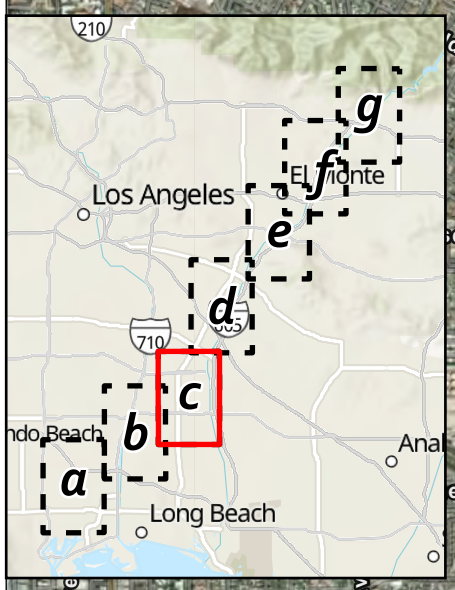
Low to High, with increasing depth

Low

Geologic Unit

Qwa: Active wash deposits (late Holocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)



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PUREWATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3c

Backbone Alignment

- Open Trench (7-ft Diameter Pipe)
- Tunnel (7-ft Diameter Pipe)

Paleontological Sensitivity

- High
- Low to High, with increasing depth
- Low

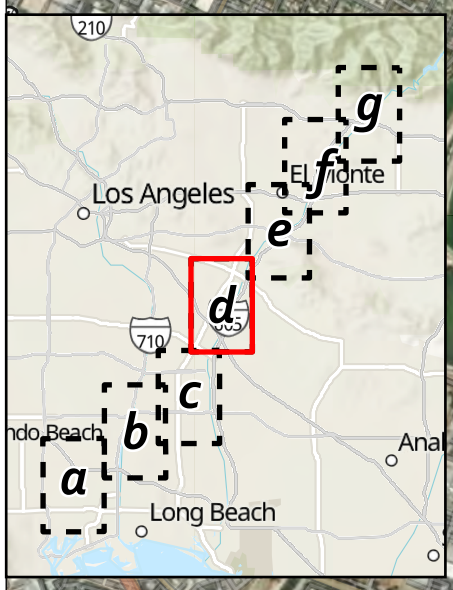
Geologic Unit

Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

Qwa: Active wash deposits (late Holocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)

Qyw: Wash deposits (Holocene and late Pleistocene)



Qyw Qwa Qya Qoa Pico Rivera Pico Rivera Plaza Shopping Center Beverly Blvd Beverly Rd Elnora St Fir St Pine St Deland Ave Rosemead Blvd Whittier Blvd Pico Vista Rd Pioneer Blvd Mines Ave Paramount Blvd Rosemead Blvd S Greenwood Ave S Montebello Blvd S Bluff Rd Pico Revera Towne Center El Rancho High School Bexley Dr Rex Rd Danbridge St Citronell Ave Crossway Dr Slauson Ave Washington Blvd Millergrove Dr Vicki Dr Aeolian St Saragosa St Rivera Rd Norwalk Blvd Los Nietos Rd Dice Rd Tweedy Ln Brock Ave Downey Ave Stoakes Ave Brookshire Ave Lakewood Blvd Arrington Ave Serapis Ave Aero Dr Eglise Ave Terradell St Telegraph Rd Florence Ave Gainford St Cherokee Dr Clancey Ave Chaney Ave Woodruff Ave Pangborn Ave Stonewood Center Downey High School Hall Rd Cecilia St Lakeland Rd Smith Ave Alburtis Ave Arlee Ave Pioneer Blvd Santa Fe Springs McCann Dr Clark St Longworth Ave Orr and Day Rd Roseton Ave Wilderness Park Millux Ave Glengarry Ave

0 2,000 Feet

Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3d

Backbone Alignment

- Open Trench (7-ft Diameter Pipe)
- Open Trench (9-ft Diameter Pipe)
- Tunnel (7-ft Diameter Pipe)
- Tunnel (9-ft Diameter Pipe)

Paleontological Sensitivity

- High
- Low to High, with increasing depth
- Low

Geologic Unit

Ql: Lake deposits (late Holocene)

Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

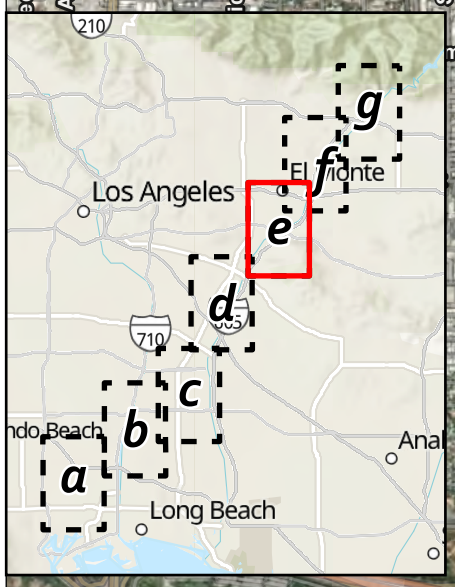
Qwa: Active wash deposits (late Holocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)

Qyw: Wash deposits (Holocene and late Pleistocene)

Tfu: Fernando Formation, Upper Member (Pliocene)

af: Artificial fill (Recent)



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Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3e

Backbone Alignment

- Open Trench (9-ft Diameter Pipe)
- Tunnel (9-ft Diameter Pipe)

Paleontological Sensitivity

- High
- Low to High, with increasing depth
- Low

Geologic Unit

Qaa: Young active alluvium and alluvial-fan deposits (late Holocene)

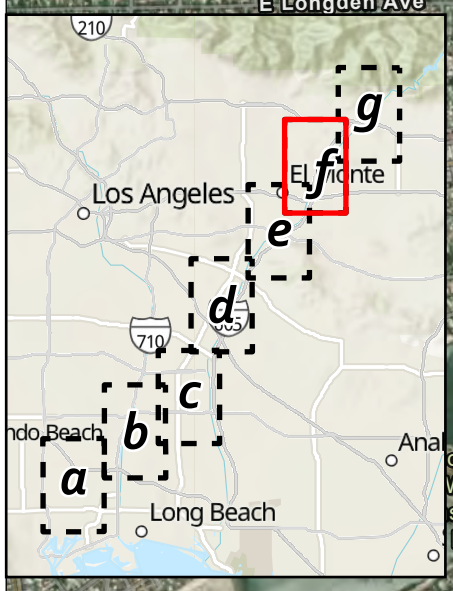
Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

Qwa: Active wash deposits (late Holocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)

Qyw: Wash deposits (Holocene and late Pleistocene)

af: Artificial fill (Recent)



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PUREWATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3f

Backbone Alignment

- Open Trench (9-ft Diameter Pipe)
- Tunnel (9-ft Diameter Pipe)

Paleontological Sensitivity

- High
- Low to High, with increasing depth
- Low
- None

Geologic Unit

Ksgr: Tonalite of San Gabriel Reservoir (Cretaceous)

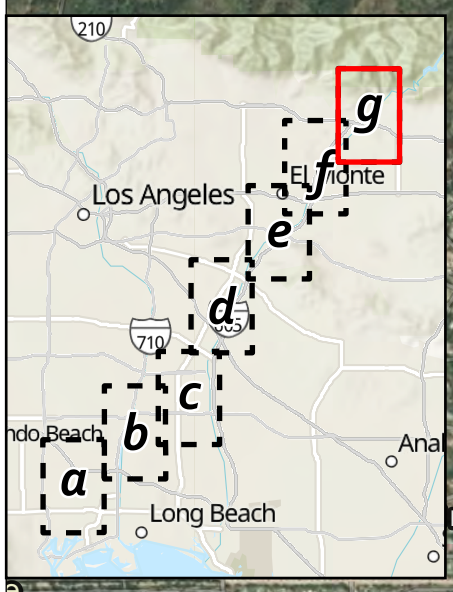
Qaa: Young active alluvium and alluvial-fan deposits (late Holocene)

Qoa: Older alluvium and alluvial-fan deposits (Pleistocene)

Qwa: Active wash deposits (late Holocene)

Qya: Young alluvium and alluvial-fan deposits (Holocene)

af: Artificial fill (Recent)



Duarte Wilderness Preserve

Ksgr

Qoa

Ksgr

Qaa

Qya

N San Gabriel Canyon Rd

Ranch Rd

Qwa

Qya

Vineyard Ave

Las Lomas Rd

Royal Oaks Dr

Azusa Greens Country Club

Encanto Pkwy

Rancho Duarte Golf Course

af

Huntington Dr

Maynard Dr

W 11th St

W 10th St

W 10th St

N Todd Ave

N Vernon Ave

W 8th St

Central Ave

Evergreen St

Qya

Qya

Qya

af

W Foothill Blvd

Azus

W 6th St

W 5th St

W 4th St

W 3rd St

W 3rd St

N Irwindale Ave

N Angeleno Ave

Qaa

Qya

af

af

Santa Fe Dam Open Space

S Motor Ave

S Vernon Ave

39

W Gladstone St

E Orkney St

S Azusa Ave

af

Qya

aQya

Qwa

Qya

Arrow Hwy

Santa Fe Dam Recreation Area

S Vincent Ave

Arrow Hwy

Arrow Hwy

E Arrow Hwy

Stewart Ave

La Rica Ave

Bleecker St

Nubia St

Lante St

Canyon Rd

4th St

Irwindale

Olive St

Blvd

Ave

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Source: Aerial (Esri 2021)

PUREWATER SOUTHERN CALIFORNIA

Paleontological Resource Potential

Figure 5.5-3g

paleontological study area, but review of reference documents indicates that Palos Verdes Sand correlates to marine deposits that are present in the paleontological study area. These sediments may also be present underlying the adjoining young alluvium and alluvial fan deposits in the southern portion of the paleontological study area, along Del Amo Boulevard. Due to the abundant yield of fossils, most notably significant (e.g., diagnostic) vertebrate specimens from localities within 0.5 mile of the paleontological study area, documented from this unit, the Palos Verdes Sand is considered to have a high paleontological potential.

La Habra Formation

The La Habra Formation dates to the late Pleistocene, making this unit old enough to preserve fossils. Due to the documented recovery of fossils, including significant vertebrate specimens from localities within 5 miles of the paleontological study area, the La Habra Formation is considered to have a high paleontological potential.

Fernando Formation

The Fernando Formation has an extensive record of preserving paleontological resources, including localities documented within one mile of the paleontological study area. These localities collectively yielded numerous marine fossils such as fish, shark, marine mammals, and invertebrates. Given the extensive record of fossil preservation in the Fernando Formation, it is considered to have high paleontological potential.

Puente Formation, Sycamore Canyon Member

The Sycamore Canyon Member of the Puente Formation has an extensive record of fossil preservation across Southern California, including localities within 7 miles of the paleontological study area. Given the extensive record of fossil preservation in the Sycamore Canyon Member of the Puente Formation, it is considered to have high paleontological potential.

Tonalite of San Gabriel Reservoir

Tonalite forms from cooling magma and will therefore not contain fossils. The Tonalite of San Gabriel Reservoir is assessed here as having no paleontological potential.

5.5.2 Regulatory Framework

5.5.2.1 Federal

International Building Code

The International Building Code (IBC) is the building code that provides the minimum requirements that must be implemented throughout the United States and its territories. It is an essential tool to preserve public health and safety that provides safeguards from hazards associated with the built environment. It addresses design and installation of innovative materials that meet or exceed public health and safety goals. Provisions within the IBC are intended to ensure that structures can adequately resist seismic forces during earthquakes. These seismic provisions provide guidance on how structures should be designed and constructed to limit seismic risk.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act (PRPA) directs the U.S. Department of the Interior and U.S. Department of Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise," including plans for inventory, monitoring, and the scientific and educational use of paleontological resources (16 U.S.C. Section 470aaa). To formulate a consistent paleontological resources management framework, the PRPA incorporates most of the recommendations from the report of the Secretary of the Interior titled "Assessment of Fossil Management on Federal and Indian Lands" (U.S. Department of the Interior 2000). The PRPA officially recognizes the scientific importance of paleontological resources by declaring that Section 2, Federal Lands & Policy Management Act of 1962 [30 U.S.C. 611]; Subpart 3631.0 *et seq*., Federal Register Vol. 47, No. 159, 1982) does not refer specifically to paleontological resources. However, paleontological resources are understood and recognized in policy as scientific resources, as recognized with the passage of the PRPA. Under the Federal Lands & Policy Management Act, federal agencies are charged to:

- manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102);

- periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102); and

- regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302; 43 U.S.C. Sections 1701 and 1732).

5.5.2.2 State

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the CCR, Part 2, was promulgated based on the IBC to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of entering and exiting facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The CBC provides requirements for general structural design and includes means for determining earthquake loads. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. According to the CBC, structures should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Although no guarantees can be made, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

Seismic design specifications are determined according to the seismic design category in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), loadbearing of soils (Section 1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For certain seismic design categories, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Greenbook Standard Specifications for Public Works Construction

The Greenbook Standard Specifications for Public Works Construction (Greenbook) provides standard specifications for public works projects, including measures related to geologic issues such as soil testing, grading and excavation, pipeline construction and joints, and design/construction of concrete and masonry features. Like the IBC and CBC, the Greenbook is regularly updated to reflect current industry standards and practices.

Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act)

The Alquist-Priolo Act was passed in 1972 to provide a mechanism for reducing losses from surface fault rupture on a statewide basis. The main intent of the Alquist-Priolo Act is to ensure public safety by preventing the construction of buildings used for human occupancy on the surface trace of active faults. The Alquist-Priolo Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The law requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (California PRC Section 2690 *et seq*.) addresses earthquake hazards from non-surface fault rupture, including liquefaction, landslides, strong ground shaking, and other earthquake and geologic hazards for structures intended for human occupancy. The Seismic Hazards Mapping Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils. In addition, the related CGS Special Publications 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (CGS 2008), provides guidance for the evaluation and mitigation of earthquake-related hazards for applicable projects.

Construction General Permit

As authorized by the federal CWA, the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, otherwise referred to as the Construction General Permit (CGP), regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from certain construction sites. Administered by and through the SWRCB and nine Regional Boards, the CGP requires the development and implementation of a SWPPP that includes specific BMPs, including, but not limited to, erosion control. For Linear Underground/Overhead Projects, the permit or waste discharge requirements (WDRs) states that one of the following conditions must be met: (1) at least 70 percent of pre-existing vegetative cover is reestablished following construction; (2) in areas that were not previously vegetated, sites are returned to original grade and/or soils are compacted; or (3) equivalent measures such as blankets, soil cement, or geotextiles are installed. Routine inspection of all BMPs is required under the provisions of the CGP. In addition, the SWPPP is required to contain a visual monitoring program for erosion.

Public Resources Code

The California PRC (Chapter 1.7, Section 5097) includes state-level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on non-federal public lands, define the removal of paleontological sites or features from state lands as a misdemeanor, and prohibit the removal of any paleontological site or feature from state land without permission of the applicable jurisdictional agency.

5.5.2.3 Local

Standards related to potential geologic hazards, generally for occupied buildings, are developed by local agencies and jurisdictions. Local agencies incorporate such standards into sources such as general plans and municipal codes. Typically, these standards encompass the types of federal and state regulatory and industry standards outlined above. They include requirements for appropriate geotechnical analyses and remediation for development projects based on site-specific conditions. Metropolitan has adopted standard specifications related to geologic hazards that apply to its infrastructure.

5.5.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to geology and soils. Pure Water would have a significant impact if it would:

1. Directly or indirectly cause 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,

    ii) Strong seismic ground shaking,

iii) Seismic-related ground failure including liquefaction, or

iv) Landslides;

2. Result in substantial soil erosion or the loss of topsoil;

3. 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse;

4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;

5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or

6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

5.5.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

GM-EC-1 **Environmental Awareness Training.** Prior to construction, the Contractor shall attend an Environmental Awareness Training with Metropolitan's construction management team and designated environmental monitors (i.e., qualified biologist, archaeologist, Native American monitor, paleontologist, hazardous materials specialist, as applicable). An Environmental Awareness Training program shall inform all employees of the sensitive resources known or with potential to occur in the local area; the sensitivity of the area in which they will be working; and environmental measures and requirements to comply with project approvals and environmental permits and regulations.

GEO-EC-1 **Conduct Site-specific Geotechnical Investigations**. Site-specific geotechnical investigations shall be completed for each component of Pure Water prior to final design and construction. These investigations shall identify site-specific criteria related to considerations such as grading, excavation, fill, and structure/facility design. Applicable results and recommendations from the geotechnical investigations shall be incorporated into the construction documents to address identified potential geologic and soil hazards, including: (1) seismic hazards such as ground rupture, ground acceleration (ground shaking), liquefaction (and related issues such as dynamic settlement and lateral spreading), and landslides/slope instability; and (2) non-seismic hazards including instability of manufactured slopes, subsidence, compressible soils, expansive or corrosive soils, and trench/excavation instability. The final design and construction documents shall also encompass applicable standard design and construction practices from established regulatory/industry sources including the California Building Code, International Building Code, California Geological Survey,

Greenbook Standard Specifications for Public Works Construction, as well as Metropolitan standards.

HYD-EC-1 **Construction General Permit Storm Water Pollution Prevention Plan.** The contractor shall obtain coverage under the Construction General Permit (CGP) and comply with its conditions, including preparation and implementation of site-specific Stormwater Pollution Prevention Plans (SWPPPs) in accordance with the requirements of the State Water Resources Control Board, CGP, and Construction BMP [Best Management Practices] Online Handbook developed by California Storm Water Quality Association. These SWPPPs shall identify BMPs to eliminate/reduce non-storm water discharges to storm systems and other waters of the U.S., prevent construction pollutants from contacting storm water, limit erosion and sediment transport, and manage erosion and pollutants onsite.

5.5.5 Impact Analysis

5.5.5.1 Topic 1: Seismic Hazards

Would Pure Water directly or indirectly cause 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.

ii) Strong seismic ground shaking,

iii) Seismic-related ground failure including liquefaction, or

iv) Landslides?

Program-Level Analysis

Pure Water would be located in the seismically active region of Southern California (**Figure 5.5-2**). Based on the presence of active faults in the Pure Water area, most notably the Newport-Inglewood Fault, the Whittier Fault, and the Sierra Madre Fault, Pure Water facilities and components could be subject to fault rupture where they cross a fault, and strong-seismic ground shaking in the event of an earthquake. Pure Water facilities and components could also be subject to liquefaction based on the presence of liquefaction zones in the Pure Water area (CGS 2021). As a result of the relatively level topography and lack of landslide zones within the Pure Water area in proximity to Pure Water facilities components with currently defined locations (CGS 2021), Pure Water facilities and components are not anticipated to be subject to risk from landslides. Should a facility or component be proposed within a landslide zone, site-specific geotechnical investigations would be performed in accordance with **GEO-EC-1** and appropriate design and construction measures to accommodate potential risks. Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to landslides would be **less than significant**.

Fault rupture, strong seismic ground shaking, and liquefaction would have the potential to affect the integrity of Pure Water facilities and components, which could result in flooding if a pipeline or other facility were to rupture and uncontrolled releases were to occur. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be performed for each facility and component that would identify appropriate design and construction measures to accommodate potential risks associated with fault rupture, seismic ground shaking, and liquefaction. Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to seismic hazards would be **less than significant**.

Project-Level Analysis

Fault Rupture

The proposed facilities at the Joint Treatment Site would not be located within a currently designated Alquist-Priolo Earthquake Fault Zone (Converse Consultants 2023) or be underlain by active faults and would not be subject to substantial risk from fault rupture. A portion of the backbone pipeline north of the Santa Fe Spreading Grounds is within a currently designated Alquist-Priolo Earthquake Fault Zone associated with the Sierra Madre Fault and could be subject to risk from fault rupture (GeoPentech 2022). As discussed in Section 5.5.2.2, the main intent of the Alquist-Priolo Earthquake Fault Zone mapping is to ensure public safety by preventing the construction of buildings used for human occupancy on the surface trace of active faults. Since the backbone pipeline would not be used for human occupancy, it does not require special fault measures as directed by the Alquist-Priolo Act. The active Sierra Madre, Newport-Inglewood, and Whittier faults underlying portions of the backbone pipeline could rupture and have the potential to affect the integrity of the backbone pipeline, which could result in flooding if the pipeline were to break and result in uncontrolled release.

Resiliency of the pipeline for a given seismic event would be considered during design and construction of the backbone pipeline. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be conducted for each reach of the backbone pipeline that would inform appropriate design and construction measures to accommodate projected average fault displacement and relative motion, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook). Fault crossings would require fault-specific investigations that could rely upon field investigations using geophysical methods, subsurface explorations including drilling and soil sampling, and fault displacement hazard analyses using documented fault activity data. Special pipe segments or connections would be incorporated into the design as applicable to accommodate estimated pipe structural demands. Metropolitan would conduct plan review and on-the-ground geotechnical observations during construction activities to ensure that applicable design measures and related efforts to ensure conformance with applicable industry/regulatory standards are implemented. Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to fault rupture hazards would be **less than significant**.

Seismic Ground Shaking

Based on the presence of active faults in the Pure Water area, including the Newport-Inglewood Fault, the Whittier Fault, and the Sierra Madre Fault (refer to **Figure 5.5-2**), proposed facilities at the Joint Treatment Site and along the backbone pipeline would potentially be subject to strong seismic ground shaking, which could affect the integrity of the facilities. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be performed for the Joint Treatment Site and each reach of the backbone pipeline that would identify appropriate design and construction measures to accommodate

projected seismic loading, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook).

Specifically, these measures would involve incorporating applicable seismic loading factors into the design of facilities (e.g., structures, foundations/slabs, pavement, and utilities); related activities including remedial grading (e.g., removing/replacing and/or reconditioning unsuitable soils); appropriate manufactured slope, retaining wall and drainage design; and proper fill composition/placement (i.e., engineered fill). Implementation of design measures to ensure conformance with applicable industry/regulatory standards would be verified, as necessary, through Metropolitan plan review and on-the-ground geotechnical observations during construction activities. Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to seismic ground shaking would be **less than significant**.

Liquefaction

Pure Water facilities are potentially subject to risk associated with liquefaction because a large portion of the backbone pipeline, as well as a portion of the Joint Treatment Site, is within a mapped liquefaction hazard zone (GeoPentech 2022; Converse Consultants 2023; refer to **Figure 5.5-2**), with shallow groundwater at depths of 20 feet or less located throughout the Pure Water area. In accordance with **GEO-EC-1**, more detailed, site-specific geotechnical investigations would be performed for the Joint Treatment Site and each reach of the backbone pipeline as more specific facility designs are developed. These investigations would identify appropriate design and construction measures to address potential liquefaction and related hazards, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook). These explorations would include, for example, evaluation of soil types, in-place density and distribution, and depth to groundwater.

These measures may include removing unsuitable soils and replacing them with engineered fill; employing measures such as compaction grouting (i.e., injecting grout into the ground at high pressure to displace and compact the surrounding soils), rammed aggregate piers (i.e., densified columns of aggregate to provide support), stone columns, and soil-cement mix; using pile foundations bypassing the upper liquefaction zone for sufficient structural support; using appropriate surface drainage and/or subdrains in applicable areas to avoid or reduce near-surface saturation; and designing for potential settlement of liquefiable materials through means such as use of mat or post-tensioned foundations and/or flexible couplings for utility connections. Soil anchors or weighting would also be employed as applicable to prevent potential pipe flotation due to liquefaction. Site-specific conditions and remedial efforts associated with liquefaction and related hazards would be verified, as necessary, through Metropolitan plan review and on-the-ground geotechnical observations and testing during construction activities. As a result of these efforts, site-specific modifications to the measures would be implemented as necessary to ensure conformance with all applicable regulatory requirements and industry standards. Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to liquefaction would be **less than significant**.

Landslides

The Joint Treatment Site and backbone pipeline would be located in areas characterized by relatively flat terrain. In addition, the Joint Treatment Site and backbone pipeline are not within a mapped landslide hazard zone (GeoPentech 2022; Converse Consultants 2023; refer to **Figure 5.5-2**). Therefore, the potential for seismically induced landslides to affect proposed facilities at the Joint Treatment Site and

along the backbone pipeline is considered low, and impacts related to landslides would be **less than significant**.

5.5.5.2 Topic 2: Erosion and Loss of Topsoil

Would Pure Water result in substantial soil erosion or the loss of topsoil?

Program-Level Analysis

Proposed excavation, grading, and construction activities associated with implementation of Pure Water facilities and components could potentially result in related erosion and off-site sediment/topsoil transport (sedimentation) from soil disturbance and exposure. Short-term erosion and sedimentation impacts during construction would be addressed through conformance with the NPDES CGP (per **HYD-EC-1**), including implementation of BMPs, and associated storm water standards of local jurisdictions. Erosion and sedimentation are not considered to be significant long-term concerns because disturbed areas would be stabilized through installation of hardscape, landscaping, or other applicable soil stabilization measures in conformance with the NPDES CGP (per **HYD-EC-1**). Based on this mandatory conformance to applicable regulatory requirements, potential impacts related to erosion and sedimentation would be **less than significant**.

Project-Level Analysis

Proposed excavation, grading, and construction activities associated with implementation of the project-level components could potentially result in related erosion and off-site sediment/topsoil transport (sedimentation). Proposed construction activities would involve the removal of surface stabilizing features such as vegetation and hardscapes, excavation of existing compacted materials, redeposition of excavated material as fill, and potentially disposal of extracted groundwater (as further discussed in Section 5.8, *Hydrology and Water Quality*).

Short-term construction-related erosion and sedimentation impacts would be addressed through conformance with the NPDES CGP (per **HYD-EC-1**) and associated storm water standards of local jurisdictions, which would involve implementation of a SWPPP, including associated control measures such as covering of stockpiles, stabilization of disturbed slopes, check dams, and other measures to minimize erosion and sedimentation. Erosion and sedimentation are not considered to be significant long-term concerns because disturbed areas would be stabilized through installation of hardscape, landscaping, or other applicable soil stabilization measures in conformance with the NPDES CGP (per **HYD-EC-1**). Based on mandatory conformance to applicable regulatory requirements, potential impacts related to erosion and sedimentation would be **less than significant**.

Since the primary effects of erosion and sedimentation are associated with water quality concerns, more detailed description of erosion/sedimentation control through NPDES and related regulatory requirements is provided in Section 5.8.

5.5.5.3 Topic 3: Geologic Instability

Would Pure Water 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?

Implementation of Pure Water could potentially result in impacts associated with geologic and soil instability, including issues related to subsidence and collapsible soils, which are discussed below. Related potential issues such as seismically induced landslides and liquefaction/lateral spreading are addressed above in Section 5.5.5.1. In addition, due to the lack of steep slopes in the Pure Water area (as described above in Section 5.5.5.1), effects related to non-seismic slope stability would be negligible and are not considered further.

Program-Level Analysis

Based on the presence of alluvial and fluvial deposits in the Pure Water area, subsidence and collapse would have the potential to affect the integrity of Pure Water facility and components, which could result in flooding if a pipeline or other facility were to rupture and result in uncontrolled releases. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be performed for each facility and component that would identify appropriate design and construction measures to accommodate potential risks associated with geologic instability. Effects associated with the potential occurrence of groundwater during excavation would be addressed through compliance with regulatory requirements under applicable SWRCB and Regional Board orders (described further in Section 5.8). Therefore, potential impacts related to geologic instability, including subsidence and collapsible soils, would be **less than significant**.

Project-Level Analysis

Subsidence

The alluvial and fluvial deposits underlying the southwestern portion of the Pure Water area may be subject to subsidence, which would limit the bearing capacity of the soils/formational materials under heavy equipment used during construction and under permanent facilities. Implementation of the project-level components would incorporate appropriate design and construction measures to address potential hazards related to subsidence, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook) and the site-specific geotechnical investigations that would be completed for the Joint Treatment Site and each reach of the backbone pipeline prior to final design and construction per **GEO-EC-1**.

Measures may involve standard efforts such as over-excavation and recompaction or replacement of unsuitable materials with engineered fill, use of enhanced foundation design for buildings (e.g., pile foundations), and surcharging (i.e., loading prior to construction to induce settlement). Through the described efforts, conformance with applicable regulatory requirements and industry standards would be ensured and potential impacts from subsidence would be **less than significant**.

Collapsible Soils

The alluvial and fluvial deposits underlying the majority of the Pure Water area may be subject to collapse. Implementation of the project-level components would incorporate appropriate design and

construction measures to address potential hazards related to collapsible soils, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook) and the site-specific geotechnical investigations that would be completed for the Joint Treatment Site and each reach of the backbone pipeline prior to final design and construction per **GEO-EC-1**.

Measures may involve standard efforts such as over-excavation and recompaction or replacement of unsuitable materials with engineered fill, deep soil mixing, use of subsurface structures to provide support for buildings, proper surface drainage/subdrains for buildings, and surcharging. Through the described efforts, conformance with applicable regulatory requirements and industry standards would be ensured and potential impacts from collapsible soils would be **less than significant**.

5.5.5.4 Topic 4: Expansive Soil

Would Pure Water be located on expansive soil, creating substantial direct or indirect risks to life or property?

Program-Level Analysis

Clay soils are known to occur in the Pure Water area, meaning there is potential for expansive soils to be present, which could affect the integrity of Pure Water structures and facilities. This could result in flooding if a pipeline were to break and result in uncontrolled releases. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be performed for each Pure Water facility and component that would identify appropriate design and construction measures to accommodate potential risks associated with expansive soils in accordance with applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook). Based on this mandatory conformance to applicable regulatory requirements and industry standards, potential impacts related to expansive soil would be **less than significant**.

Project-Level Analysis

Based on the presence of clay minerals in the Pure Water area, specifically along the southern portion of the backbone alignment and at the Joint Treatment Site, soils are anticipated to have low to medium expansion potential (GeoPentech 2022 and Converse Consultants 2023). Implementation of the project-level components would incorporate appropriate design and construction measures to address potential hazards related to expansive soils, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook) and the site-specific geotechnical investigations that would be completed for the Joint Treatment Site and each reach of the backbone pipeline prior to final design and construction per **GEO-EC-1**.

Measures may involve one or more standard efforts such as removing the upper portion of underlying soils throughout areas beneath structures and replacing with imported non-expansive sandy soil materials, reinforcing footings for buildings, placing thicker concrete slabs with moisture barriers under buildings, and lime-treating the upper portion of underlying soils. Site-specific modifications to the described recommendations would be implemented as necessary to ensure conformance with applicable regulatory requirements and industry standards. Implementation of and conformance with such recommendations and standards would effectively ensure that potential impacts from expansive soils would be **less than significant**.

5.5.5.5 Topic 5: Soils Incapable of Adequately Supporting Use of Septic Tanks or Alternative Wastewater Disposal Systems

Would Pure Water have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Program-Level Analysis

Facilities involving regular human occupancy (treatment facilities and pump stations) and thus requiring wastewater disposal would be connected to the sanitary sewer system. Other Pure Water facilities and components, including pipelines and recharge facilities, would not require wastewater disposal. Thus, no septic tanks or alternative waste disposal systems would be constructed or required for use in association with Pure Water. Because such facilities would not be required, the capability of soils to support such uses is not relevant to this analysis. **No impact** related to septic tanks or alternative wastewater disposal systems requiring percolation/infiltration would occur.

Project-Level Analysis

Facilities at the Joint Treatment Site (e.g., lab/classrooms and operations building, visitor center) involving regular human occupancy and thus requiring wastewater disposal would be connected to the sanitary sewer system. Other components, including the backbone pipeline, would not require wastewater disposal. Accordingly, the project-level components would not involve the use of septic tanks or alternative wastewater disposal systems requiring percolation/infiltration. The capability of soils to support such uses is therefore not relevant to this analysis and **no impact** would occur.

5.5.5.6 Topic 6: Paleontological Resource or Site or Unique Geologic Feature

Would Pure Water directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

As indicated in Section 5.5.1.2, no unique geological features are known to be present in the Pure Water area. Therefore, no impacts to unique geological features would occur and no further discussion is provided; the remainder of this discussion focuses on paleontological resources.

Program-Level Analysis

Neither CEQA nor the CEQA Guidelines includes a specific definition of "unique paleontological resource or site," nor do they establish thresholds for significance for such resources or sites. Further guidance can be found in Scott and Springer (2003). Those authors stated that significant paleontological resources include "fossil remains of large to very small aquatic and terrestrial vertebrates, remains of plants and animals previously not represented in certain portions of the stratigraphy, and fossils that might aid stratigraphic correlations, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, paleoclimatology, and the relationships of aquatic and terrestrial species" (2003:6). Furthermore, they also advised that impacts might be considered less than significant if dense concentrations of plant and/or invertebrate fossil remains were "so locally abundant that the impacts to the resources do not appreciably diminish their overall abundance or diversity" (2003:6).

More recent guidance has been developed by the Society for Vertebrate Paleontology (SVP 2010), which defines significant paleontological resources as "fossils and fossiliferous deposits, here defined as

consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years)."

Therefore, any identifiable vertebrate fossil remains would be considered unique under CEQA, and direct or indirect impacts on such remains would be considered significant. Identifiable invertebrate and plant fossils would be considered unique if they meet the criteria presented above. Determinations take into account the abundance and densities of fossil specimens or newly and previously recorded fossil localities in exposures of the rock units present at a project site.

Construction of the Pure Water facilities and components would involve a variety of ground-disturbing activities, including grading, trenching, excavating, and tunneling. As discussed above in Section 5.5.1.5, geologic formations with high paleontological potential are present in the Pure Water area. Ground-disturbing activities, especially those exceeding depths of artificial fill, previously disturbed sediments, and younger sediments with low potential for paleontological resources, would have the potential to encounter unique paleontological resources. Potential impacts associated with the project-level components, for which specific locations are known relative to geologic formations with high paleontological potential, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water components are unknown at this stage of program design, there is potential for these components to be sited over geologic formations with high paleontological potential, and ground-disturbing activities in these areas during construction could result in the destruction of unique paleontological resources. Impacts are therefore considered **potentially significant**.

Project-Level Analysis

As discussed above under *Program-Level Analysis*, construction of the Pure Water facilities and components would involve a variety of ground-disturbing activities, including grading, trenching, excavating, and tunneling. Specific to the components analyzed at the project level, grading and excavation activities for construction at the Joint Treatment Site are expected to extend to a depth of 30 feet below ground surface. Although vacant now, this area was previously developed; however, the depth of previous disturbance is unknown. Trenching for installation of the backbone pipeline would extend to approximately 21 feet below ground surface in general. Tunneling could extend up to 150 feet below ground surface, although most tunneled areas currently are anticipated to be 45 feet below ground surface or shallower. Construction of other facilities analyzed at the project level would include ground disturbance, soil stripping, and minor grading, which would be shallower than the trenching or tunneling required for these components.

The Joint Treatment Site and backbone alignment traverse numerous geologic formations with high paleontological potential, including alluvium and alluvial-fan deposits, marine terrace deposits, Palos Verdes Sand, La Habra Formation, Fernando Formation, and the Sycamore Canyon Member of the Puente Formation. There are no portions of the Joint Treatment Site and backbone alignment where high paleontological potential units are present at the surface; therefore, activities at the surface and in the subsurface within these units, such as clearing, light grading, and shallow utility installation, would have low potential to impact unique paleontological resources. The exact depth at which undisturbed high potential units are present cannot be determined and is likely to vary across the paleontological study area.

The majority of the Joint Treatment Site and backbone alignment (53 percent) is mapped as alluvial sediments that have low potential near the surface due to age, increasing to high potential at the subsurface (**Figure 5.5-3a** through **5.5-3g**). In areas where high potential units are mapped at the surface, impacts may occur if ground disturbance exceeds the depth of previous surficial disturbance or artificial fill. As described above, this depth cannot be determined at this time and is likely to be highly variable across the Joint Treatment Site and backbone alignment. In areas mapped as one of these high potential units at the surface, ground disturbance in excess of the depth of artificial fill or previous disturbance has the potential to impact unique paleontological resources. Impacts are therefore considered **potentially significant**.

5.5.6 Level of Significance Before Mitigation

Impacts associated with seismic hazards, geologic instability, expansive soils, and erosion and loss of topsoil would be **less than significant**. **No impact** would occur related to septic tanks or alternative wastewater disposal systems or to unique geological features. Therefore, no mitigation measures are required for these topics. Impacts associated with paleontological resources are considered **potentially significant**.

5.5.7 Mitigation Measures

The following mitigation measures would be required to address potentially significant impacts associated with paleontological resources.

PAL-MM-1 **Paleontological Monitoring and Management Plan.** Metropolitan shall retain a qualified paleontologist meeting professional standards as defined by Murphey et al. (2019) to oversee all aspects of paleontological monitoring and management as the designated Project Paleontologist. The Project Paleontologist, in conjunction with Metropolitan, shall develop and oversee the implementation of a Paleontological Monitoring and Management Plan (PMMP) tailored to Pure Water. The PMMP shall require full-time paleontological monitoring of the duration of earthwork and ground-disturbing activities into undisturbed geologic units with high paleontological potential by a paleontological monitor meeting standards as defined by Murphey et al. (2019). In addition, the PMMP shall require that spot checking be conducted during ground-disturbing activities impacting geologic units with low paleontological potential at the surface to determine if older, more sensitive sediments could be impacted at depth and if additional monitoring is required. Testing of sediment samples for microvertebrate fossils where appropriate shall be included in the PMMP. The PMMP shall also address requirements for worker training; steps to follow in the event of a fossil discovery, whether by a paleontological monitor or by a member of the construction staff; assessment and treatment requirements for fossils, including curation, if fossils assessed as unique are encountered; and requirements for final reporting.

PAL-MM-2 **Paleontological Resource Discovery.** The paleontological monitor shall conduct monitoring in accordance with the approved PMMP. If a paleontological resource is encountered, the contractor shall immediately cease all work within 50 feet of the discovery, notify Metropolitan's Construction Manager, and protect the discovery area, as directed by the construction manager. The Project Paleontologist shall decide on the

validity of the discovery and work with the Construction Manager to designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Construction Manager provides written authorization. If the Project Paleontologist assesses the paleontological resource as unique, it shall be collected and curated in an accredited repository along with all necessary associated data as detailed in the PMMP.

5.5.8 Level of Significance After Mitigation

As described above, impacts associated with seismic hazards, geologic instability, expansive soils, and erosion and loss of topsoil would be **less than significant without mitigation**. Similarly, **no impacts** would occur related to septic tanks or alternative wastewater disposal systems or to unique geologic features without mitigation. Through implementation of **PAL-MM-1** and **PAL-MM-2**, impacts associated with paleontological resources would be **less than significant**.

5.5.9 References

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5.6 GREENHOUSE GAS EMISSIONS

This section addresses the potential greenhouse gas (GHG) emissions impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts. As noted at the beginning of this chapter, potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

GREENHOUSE GAS EMISSIONS LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations[1]	Yes
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

[1] While the specific locations for the pump stations are currently not known, they are analyzed at the project-level for this GHG analysis since GHG impacts are not location-specific.

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Air Quality, Greenhouse Gas Emissions, and Energy Technical Report prepared for the Joint Treatment Site and backbone conveyance system (HELIX 2025; Appendix B).

5.6.1 Existing Conditions

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence that takes place in Earth's atmosphere and helps regulate the temperature of the planet. GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include, but are not limited to, the following (USEPA 2024a):

- **Carbon Dioxide (CO_2).** Carbon dioxide is the primary form in which carbon exists in the

atmosphere and is produced primarily by fossil fuel combustion, forest clearing, biomass burning, and some non-energy production processes, such as cement production.

- **Methane.** Methane is a hydrocarbon that is a primary component of natural gas. Methane emissions are generated by the anaerobic decomposition of organic matter in biological systems and are generated mainly by agricultural activities (e.g., rice cultivation, enteric fermentation in animals, decomposition of animal wastes), decomposition of municipal solid wastes, wastewater treatment, production and distribution of natural gas and petroleum, incomplete fossil fuel combustion, and coal mining.

- **Nitrous Oxide.** Nitrous oxide is a compound released primarily by agricultural soils (due to the application of fertilizers, manure deposition, and production of nitrogen-fixing crops), fossil fuel combustion, wastewater treatment, waste incineration, and biomass burning.

- **Hydrofluorocarbons.** Hydrofluorocarbons are primarily used as replacements for ozone-depleting substances in refrigeration, air conditioning, insulating foams, and aerosol propellants and are emitted through wear, faulty maintenance, and/or leakage over the lifetime of these products.

- **Perfluorocarbons and Sulfur Hexafluoride.** Perfluorocarbons and sulfur hexafluoride are emitted primarily by industrial processes such as aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting.

Different types of GHGs have varying global warming potentials. The global warming potential of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its global warming potential. Carbon dioxide has a 100-year global warming potential of one. By contrast, methane has a global warming potential of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).[1]

Anthropogenic activities since the beginning of the Industrial Revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the concentration of GHGs in the atmosphere that trap heat. Since the late 1700s, estimated concentrations of CO_2 in the atmosphere have increased by 49 percent, primarily due to human activity (USEPA 2024b). GHG emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of Sierra Nevada snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (State of California 2018). For additional background information and context on GHG emissions and climate change, refer to Appendix B of the EIR.

[1] The IPCC's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2022 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

5.6.2 Regulatory Framework

This section describes the plans, policies, and regulations related to GHG emissions that are applicable to Pure Water. A more detailed discussion of the regulatory framework pertaining to GHG emissions is provided in Appendix B of the EIR.

5.6.2.1 Federal

Federal Clean Air Act

The federal Clean Air Act does not specifically regulate GHG emissions; however, the United States Supreme Court in the case of *Massachusetts v. U.S. Environmental Protection Agency, et al.,* 549 U.S. 497 (2007) determined that GHGs are air pollutants that can be regulated under the federal Clean Air Act. Currently, there are no federal regulations that set ambient air quality standards for GHGs.

5.6.2.2 State

Legislation and Executive Orders

California continues to lead the global effort of mitigating and adapting to climate change through progressive legislative and executive direction. Such actions have established a series of increasingly stringent GHG emissions reduction goals and targets intended to help reduce and reverse the effects of global climate change. These goals and targets include the following:

- **Senate Bill (SB) 32.** SB 32 serves as an update to the emissions reduction target codified under AB 32, the California Global Warming Solutions Act of 2006 (Health & Safety Code section 38500 *et seq*.). Signed into law in 2016, SB 32 establishes a statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030.

- **Executive Order (EO) B-55-18.** On September 10, 2018, the governor issued EO B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter.

- **Assembly Bill (AB) 1279**. Signed into law in 2022, AB 1279 (The California Climate Crisis Act; Health & Safety Code section 38562.2) declares the policy of the state is both to achieve net zero GHG emissions as soon as possible, but no later than 2045, and maintain net negative GHG emissions thereafter and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels.

California Air Resources Board 2022 Scoping Plan

On December 15, 2022, CARB adopted the 2022 Scoping Plan. The 2022 Scoping Plan sets a target of reducing emissions to 85 percent below 1990 levels by 2045 and outlines a technologically feasible, cost-effective, and equity-focused path to achieve carbon neutrality by 2045. As with previous scoping plans, the 2022 Scoping Plan does not provide project-level thresholds of significance. Instead, it recommends local governments implement climate strategies consistent with the 2022 Scoping Plan Appendix D: Local Actions (CARB 2022). The 2022 Scoping Plan also assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan.

CEQA Guidelines Requirements for Analysis of GHG Emissions

CEQA Guidelines Section 15064.4(a) indicates public agencies should make a careful judgment in determining the significance of GHG emissions under CEQA. Public agencies shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A public agency shall have discretion to determine, in the context of a particular project, whether to quantify GHG emissions resulting from the project and/or rely on a qualitative analysis or performance-based standards.

Additionally, CEQA Guidelines Section 15064.4(b) states that lead agencies should focus GHG analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change when determining the significance of a project's GHG emissions. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions. A lead agency's analysis should consider a timeframe that is appropriate for the project and also must reasonably reflect evolving scientific knowledge and state regulatory schemes.

CEQA Guidelines Section 15183.5(b) states public agencies may choose to analyze and mitigate significant GHG emissions in a plan for the reduction of GHG emissions or similar document, and such a plan may be used in a cumulative impacts analysis of GHG emissions. Pursuant to CEQA Guidelines Section 15183.5(b)(1), the plan for the reduction of GHG emissions should:

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels; and
- Be adopted in a public process following environmental review.

Consistent with CEQA Guidelines Sections 15064(h)(3) and 15130(d), CEQA Guidelines Section 15183.5(b)(2) states a plan for the reduction of GHG emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used for later projects in the cumulative impacts analysis for GHG emissions. An environmental document that relies on a GHG reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not already incorporated into the project or otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the specified requirements in the plan for the reduction of GHG emissions, an EIR must be prepared for the project.

5.6.2.3 Local

South Coast Air Quality Management District

Pure Water is located within the jurisdiction of the SCAQMD. In December 2008, SCAQMD adopted a threshold of 10,000 MT of CO_2 per year for industrial facilities with respect to projects where SCAQMD is the lead agency (SCAQMD 2008). However, SCAQMD's threshold is not applicable to Pure Water because SCAQMD is not the lead agency for the project under CEQA. In addition, Metropolitan has adopted a qualified CAP that enables streamlining of GHG emissions analyses pursuant to CEQA Guidelines Section 15183.5(b)(2), as discussed further in the following subsection.

The Metropolitan Water District of Southern California Climate Action Plan

In May 2022, Metropolitan adopted a CAP and certified the associated EIR. The CAP sets targets for reducing GHG emissions from Metropolitan's operations, including the conveyance, storage, treatment, and delivery of water to its 26 member agencies. The CAP informs policy and planning decisions and establishes a feasible and implementable way to reach its GHG emissions reduction target. As outlined in Section 1.1 of Metropolitan's CAP, the CAP meets all the required elements of a qualified GHG emissions reduction plan and is in compliance with CEQA Guidelines Section 15183.5(b)(1) (described previously in Section 5.6.2.2 of this EIR).

Metropolitan used an emissions inventory and forecast to provide a basis for establishing targets for future GHG reductions. Metropolitan established a 2030 target of 40 percent below 1990 levels for GHG emissions reduction to achieve consistency with SB 32 and a 2045 target of carbon neutrality consistent with AB 1279, which codifies the state's goal of achieving carbon neutrality by 2045 that was initially set forth in EO B-55-18. Metropolitan is tracking its GHG emissions annually using a carbon budget approach. The carbon budget is analogous to a tank with a set capacity, or a total mass emission cap, between emissions level in 2005 and carbon neutrality in 2045. All the emissions from Metropolitan's operations go into this "tank" each year. The total capacity of the "tank" is Metropolitan's total emissions budget, and over time that "tank" fills up. As long as Metropolitan operations produce fewer GHG emissions than can fit in the tank, the identified targets will be achieved regardless of emissions produced during any particular year. Metropolitan's total carbon budget was calculated in Section 4.3 of the CAP and is based on the total emissions that can be generated between 2005 and 2045 while still achieving Metropolitan's 2030 and 2045 GHG emissions reduction targets (Metropolitan 2022). Additionally, Metropolitan is committed to preparing annual CAP progress reports to track GHG emissions against the carbon budget as well as a CAP update every five years to achieve carbon neutrality by 2045.

The CAP includes a suite of 42 GHG emissions reduction measures that would reduce Metropolitan's GHG emissions and achieve carbon neutrality while also providing improved infrastructure reliability, increased energy resiliency, and decreased costs associated with energy procurement and maintenance. GHG reduction measures included in the CAP include, but are not limited to, phasing out natural gas combustion, converting to a zero-emissions vehicle fleet, using alternative low-carbon intensity fuels, utilizing low-carbon and carbon-free electricity, improving energy efficiency, increasing waste diversion, and increasing water conservation and local water supplies (Metropolitan 2022).

The Metropolitan Water District of Southern California Greenhouse Gas Inventory

As part of Metropolitan's ongoing CAP implementation and monitoring efforts, annual GHG inventory updates are maintained. **Table 5.6-1** provides the results of the latest year for which a complete inventory is available (Metropolitan 2024). In 2022, Metropolitan's GHG emissions totaled 336,560 MT of CO_2e.

Table 5.6-1
METROPOLITAN 2022 GREENHOUSE GAS EMISSIONS BY SCOPE

Scope	Sector	2012 MT CO_2e [1]
Scope 1	Mobile Emissions	6,315 (2%)
	Stationary Emissions	1,324 (<1%)
	SF_6/HFC Emissions	53 (<1%)
Scope 2	Electricity	312,206 (93%)
	Transmission and Distribution Losses	5,922 (2%)
Scope 3	All other Indirect Emissions	10,740 (3%)
	Total	**336,560**

Source: Metropolitan 2024
[1] Percentages may not total 100 due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

Pure Water as Included in Metropolitan's Climate Action Plan

Pure Water was analyzed and included in the CAP as the Regional Recycled Water Program (RRWP) through CAP Measure WC-6, which calls for the implementation of advanced technology systems to increase Metropolitan-owned recycled and groundwater recovery systems to maintain local water supply. Specifically, the CAP analyzed the RRWP as including construction and operation of an Advanced Water Treatment Plant (synonymous with the AWP Facility currently proposed), approximately 40 miles of pipelines, three pumping stations, and groundwater injection sites. Construction emission estimates in the CAP included emissions from construction equipment fuel consumption, labor travel, and temporary electric power usage. Operational emissions included an analysis of both electricity use and process emissions due to the consumption of carbon supplement and nitrous oxide (N_2O) generation. Emissions associated with electricity were modeled within the CAP assuming 100 percent of electricity purchased would be from the retail market. With the implementation of SB 100, GHG emissions from electricity consumed at the Advanced Water Treatment Plant would be gradually reduced to ultimately zero MT of CO_2e by 2045. Process N_2O is generated as an unintended by-product of nitrification and denitrification during the treatment of wastewater. The CAP assumed a carbon supplement, such as glycerin-based MicroC-2000, would be added to the cleaned wastewater to support both denitrification and biological phosphorus removal. The oxidation of the supplemental carbon would result in the release of CO_2. Construction and operational emissions estimated for the RRWP are presented in Tables 28 through 31 of Appendix B to the CAP. These tables have been reproduced below as **Tables 5.6-2** through **5.6-5**. For additional details regarding these estimates, please refer to the CAP.

Table 5.6-2
TOTAL CONSTRUCTION EMISSIONS FOR RRWP (I.E., THE PURE WATER PROJECT) REPORTED WITHIN THE CAP

System	Absolute Emissions (MT CO_2e)
Advanced Water Treatment	10,895
Pipelines	70,506
Pump Stations	633
Well Facilities	383
Total	**82,417**
6 Year Annual	13,736

Source: Metropolitan CAP Appendix B Table 28
MT = metric tons; CO_2e = carbon dioxide equivalent

Table 5.6-3
PROCESS OPERATIONAL EMISSIONS FOR RRWP REPORTED WITHIN THE CAP

System	Process Emissions (MT CO_2e per Year)
Process N_2O	5,340
MicroC-2000	22,271

Source: Metropolitan CAP Appendix B Table 29
MT = metric tons; CO_2e = carbon dioxide equivalent; N_2O = nitrous oxide

Table 5.6-4
ELECTRICITY EMISSIONS OVER TIME FOR RRWP OPERATIONS REPORTED WITHIN THE CAP

Year	Emissions (MT CO_2e per Year)
2031	84,090
2035	60,064
2040	30,032
2045	-

Source: Metropolitan CAP Appendix B Table 30
MT = metric tons; CO_2e = carbon dioxide equivalent

Table 5.6-5
OVERALL ESTIMATED RRWP EMISSIONS REPORTED WITHIN THE CAP

Year	Emissions (MT CO_2e)
2025 (construction)	13,736
2030 (construction)	13,736
2035 (operational)	87,675
2040 (operational)	57,643
2045 (operational)	27,611

Source: Metropolitan CAP Appendix B Table 31
MT = metric tons; CO_2e = carbon dioxide equivalent

5.6.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to GHG emissions. Pure Water would have a significant impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines 15064.4(a) states, "[t]he determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to … [use a quantitative model or qualitative model]". In turn, CEQA Guidelines 15064.4(b) clarifies that a lead agency should consider "Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project."

CEQA Guidelines Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see CEQA Guidelines Section 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (CEQA Guidelines Section 15130). It is noted that the CEQA Guidelines were amended in March of 2010 in response to SB 97 to specify that compliance with a GHG emissions reduction plan renders a cumulative impact less than significant (CEQA Guidelines Section 15183.5(b)).

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183.5(b) allows a lead agency to make a finding of a less-than-significant impact for cumulative GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

Metropolitan's CAP, adopted May 10, 2022, is a qualified GHG reduction plan consistent with CEQA Guidelines Section 15183.5. Projects consistent with an applicable local qualified GHG reduction plan are eligible for streamlined GHG analysis. The CAP identifies actions to reduce Metropolitan's carbon footprint in accordance with California's goals to cut GHG emissions by 40 percent from 1990 levels by 2030 and achieve complete carbon neutrality by 2045. Projects which are consistent with the CAP would therefore be consistent with statewide GHG reduction goals for 2030 and 2045. Therefore, this analysis determines the significance of GHG impacts based on consistency with Metropolitan's CAP.

5.6.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation; however, to remain conservative, GHG-EC-1 through GHG-EC-3 were not quantified in the calculations presented in Section 5.6.5.

GHG-EC-1 **Onsite Renewable Energy.** Metropolitan shall install photovoltaic solar panels with a total power rating of at least 1.5 megawatts at the Joint Treatment Site.

GHG-EC-2 **Electric Vehicle Charging.** Metropolitan shall install 100 Level 2 and 15 Level 3 electric vehicle chargers at the Joint Treatment Site.

GHG-EC-3 **Energy Recovery.** Metropolitan shall install inter-stage pumps in the reverse osmosis system to reduce energy use. Metropolitan shall also install Energy Recovery Devices on the concentrate pumping systems to recover energy.

GHG-EC-4 **Biogenic Carbon Supplement.** Metropolitan shall add a biogenic carbon supplement, such as glycerin-based MicroC-2000 manufactured by Environmental Operating Solutions, Inc., to support both denitrification and biological phosphorus removal at the Advanced Water Purification (AWP) Facility.

5.6.5 Impact Analysis

5.6.5.1 Topic 1: GHG Emissions

Would Pure Water generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Program-Level Analysis

The level of detail provided in this analysis corresponds to the specificity of the project description. Given the programmatic nature of Pure Water, the available information does not support precise emissions calculations. As a result, a quantitative assessment would be speculative and is not provided. Instead, this analysis relies on a qualitative approach (CEQA Guidelines Sections 15064.4, 15146, 15145, 15004). To ensure a meaningful environmental assessment, each subsequent discretionary project evaluated under this EIR will undergo its own independent CEQA review. These future analyses will incorporate more detailed, site-specific evaluations as project designs are refined and additional data become available.

As outlined in Section 1.1 of Metropolitan's CAP, the CAP meets the requirements of CEQA Guidelines Section 15183.5(b)(1) for a qualified GHG emissions reduction plan (Metropolitan 2022). As a result, pursuant to CEQA Guidelines Section 15064.4, 15183.5(a), and 15183.5(b), Metropolitan can streamline the CEQA review of its projects using the GHG emissions analysis completed for the CAP if the proposed project is consistent with the adopted CAP. Therefore, this analysis relies on the streamlining provisions of CEQA Guidelines Section 15183.5 to determine whether Pure Water would generate GHG emissions that may have a significant impact on the environment by evaluating whether Pure Water would be consistent with the CAP. Pure Water would be consistent with the CAP if its emissions are within Metropolitan's carbon budget and it incorporates applicable reduction measures from the CAP.

The carbon budget is how Metropolitan monitors if it is meeting the targets established by the CAP and demonstrating consistency with California regulations including SB 32 and AB 1279. Section 6.0, Implementation and Monitoring, of the CAP details the implementation strategy and monitoring plan to maintain accuracy and adapt to changing conditions. The CAP requires Metropolitan to prepare annual progress reports, including updating the carbon budget, to demonstrate successes and areas for continued improvement. Metropolitan will update the CAP every five years to capture new research developments and identify new, adapted, or expanded strategies. Refinements to emissions forecasts are anticipated and planned for within the CAP.

The CAP also includes a number of strategies and measures to reduce GHG emissions. Those strategies and measures applicable to Pure Water and how Pure Water would comply are described below:

CAP Strategy 3: Use alternative fuels to bridge the technology gap to zero-emission vehicles and equipment.

> In accordance with **GHG-EC-1** and **GHG-EC-2**, Pure Water would include installation of 100 EV charging stations and 1.5 MW of onsite solar panels. Additionally, mitigation measure **AQ-MM-2** requires the use of alternative fueled construction equipment as practical. Therefore, Pure Water would be consistent with CAP Strategy 3 calling for the use of alternative fuels.

CAP Measure Energy Efficiency-5: If the proposed RRWP is ultimately constructed, install an inter-stage pumping system on the reverse osmosis brine stream to reduce energy use.

> In accordance with **GHG-EC-3**, the RO system would include inter-stage pumps between the first and second stages as well as between second and third stages for improved operational performance to reduce energy use. Energy Recovery Devices would also be installed on the concentrate pumping systems to recover energy and have been included in the conceptual design for the facilities plan. As such, Pure Water would be consistent with CAP Measure Energy Efficiency-5.

CAP Measure Water Conservation-6: Implement advanced technology systems to increase Metropolitan-owned recycled and groundwater recovery systems to maintain local water supply (e.g., proposed RRWP).

> CAP Measure Water Conservation-6 calls for Metropolitan's implementation of advanced technology systems to increase recycled and groundwater recovery systems. Pure Water would utilize an AWP system, which is an advanced technology system, to substantially increase the amount of local water available, including through groundwater recharge and recovery.

CAP Strategy 6: Metropolitan has also committed to emission reduction measures to incentivize more sustainable commutes in its CAP. Existing Metropolitan programs include public transit subsidies, carpool and vanpool incentives, bike to work support, flexible schedules and telecommuting, and the emergency ride home program. These programs would be expanded to employees at the Joint Treatment Site. As such, Pure Water would be consistent with the following CAP Strategy 6 measures:

- **CAP Measure Employee Commute-1:** Expand subsidized transit commute program to reduce employee commute miles.

- **CAP Measure Employee Commute-2:** Expand employee use of carbon-free and low carbon transportation by providing education programs on the benefits of commute options including public transportation, EV/ZEV options, and vanpools.

- **CAP Measure Employee Commute-4:** Continue to offer benefits to employees who use alternative modes of transportation (e.g., public transportation, bikes).

Based on this information, Pure Water would be consistent with Metropolitan's qualified CAP. Impacts related to GHG emissions would be **less than significant**.

Project-Level Analysis

Pure Water would generate GHG emissions during construction and operation. CEQA Guidelines Section 15064.4(a) states that a lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Therefore, GHG emissions are estimated for the components of Pure Water analyzed at the project level for the GHG analysis (AWP Facility, Warren Facility improvements, Workforce Training Center, backbone pipeline, and backbone pump stations).

Construction Emissions

Construction emissions for the components of Pure Water analyzed at the project level for this GHG analysis were estimated using the methods and assumptions described in Appendix B and are provided below.

Joint Treatment Site

Construction would require the use of equipment throughout the Joint Treatment Site for the full term of construction. Construction would be completed in two phases, generally encompassing clearing, demolition of existing structures and pavements, hazardous soils removal, excavation, above-grade construction, and paving. Approximately 53,705 cubic yards of debris would be generated as a result of clearing and demolition of existing structures and pavement and would be hauled away. The volume of mass excavation would be approximately 552,000 cubic yards of soil for Phase 1 and approximately 154,000 cubic yards for Phase 2. It is assumed that 20 percent, or approximately 141,000 cubic yards, of the soil excavated would be classified as hazardous and require export for disposal at a Class II landfill. The rest of the excavated soil would be reused on site.

The results of the calculations for construction-related GHG emissions of the Joint Treatment Site are shown in **Table 5.6-6**. The data are presented as the total anticipated emissions by construction activity.

Table 5.6-6
JOINT TREATMENT SITE CONSTRUCTION GHG EMISSIONS

Construction Activity	Emissions (MT CO_2e)
Phase 1: 30 MGD (Initial Delivery)	
Clear & Grub, Utility Relocation, Shop Demo & Waste Haul Off	283
Hazardous Soils Removal	528
Mass Excavation & Haul Off	718
Structural Excavation and Foundation Prep	175
Yard Piping	162
Above Grade Facilities, Equipment, and Site Improvements	2,369
Roofing & Exterior Cladding	95
Paving & Striping	219
Phase 1: Additional 85 MGD (115 MGD Total)	
Above Grade Facilities, Equipment, and Site Improvements	2,255
Paving & Striping	69
Storm Drain Culvert	46
Roofing & Exterior Cladding	50
Phase 2: Additional 35 MGD (150 MGD Total)	
Hazardous Soils Removal	64
Structural Excavation, Haul Off, and Foundation prep	137
Yard Piping	109
Process Equipment Set and Above Grade Process Piping Installation	1,099
Roofing & Exterior Cladding	13
Paving	24
Total Construction Emissions	**8,415**

Note: Modeling data are provided in Appendix B

MT = metric tons; CO_2e = carbon dioxide equivalent; MGD = million gallons per day

Backbone Conveyance System

Backbone Pipeline

Construction of the backbone pipeline would result in temporary increases in GHG emissions generated from both off-road equipment operating onsite and on-road vehicles (worker commute, haul truck, and vendor delivery vehicles) traveling offsite. Construction of the backbone pipeline would include open trenching, pipe jacking, and tunneling methods, which would generally involve site preparation, excavation, pipe installation, backfilling, and repaving (where required). The results of the calculations for backbone pipeline construction-related GHG emissions by year are shown in **Table 5.6-7**. Given the backbone pipeline includes numerous overlapping construction activities across the eight reaches, the data are presented as the total anticipated emissions for each year.

Table 5.6-7
BACKBONE PIPELINE CONSTRUCTION GHG EMISSIONS BY YEAR

Year	Emissions (MT CO_2e)
2026	1,995
2027	11,060
2028	13,304
2029	12,773
2030	19,220
2031	8,411
2032	2,496
Total Construction Emissions	**69,259**

Note: Modeling data are provided in Appendix B
MT = metric tons; CO_2e = carbon dioxide equivalent

Pump Stations

Construction of the backbone pump stations (Sante Fe Pump Station and Whittier Narrows Pump Station) would result in temporary increases in GHG emissions generated from both off-road equipment operating onsite and on-road vehicles traveling offsite. Construction is expected to require demolition, site preparation, grading, above-ground building construction, paving, and architectural coatings.

The results of the calculations for construction-related GHG emissions of the backbone pump stations are shown in **Table 5.6-8**. The data are presented as the total anticipated emissions by construction activity.

Table 5.6-8
BACKBONE PUMP STATION CONSTRUCTION GHG EMISSIONS

Construction Activity	Emissions (MT CO_2e)
Santa Fe Pump Station	
Demolition	82
Site Preparation	67
Grading	254
Building Construction	454
Paving	32
Architectural Coatings	2
Whittier Narrows Pump Station	
Demolition	78
Site Preparation	69
Grading	254
Building Construction	459
Paving	32
Architectural Coatings	2
Total Construction Emissions	**1,784**

Note: Modeling data are provided in Appendix B. Totals may not add due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

Summary of Construction Emissions

The combined results of the GHG emissions calculations for construction at the Joint Treatment Site, backbone pipeline, and backbone pump stations are shown in **Table 5.6-9**.

Table 5.6-9
TOTAL CONSTRUCTION GHG EMISSIONS

Project Component	Emissions (MT CO_2e)
Joint Treatment Site (Table 5.6-6)	8,415
Backbone Pipeline (Table 5.6-7)	69,259
Backbone Pump Stations (Table 5.6-8)	1,784
Total Construction Emissions	**79,458**

Note: Modeling data are provided in Appendix B

MT = metric tons; CO_2e = carbon dioxide equivalent

Operational Emissions

Joint Treatment Site

Operational sources of GHG emissions at the Joint Treatment Site would include electricity consumption, nitrification/denitrification, carbon supplementation, mobile sources, and stationary sources. Specifically, electricity would be required for operation of equipment (e.g., treatment process pumps, mixers, blowers, and product water conveyance pumps) and facilities (e.g., lighting and heating, ventilation, and air conditioning systems). N_2O is generated as an unintended by-product of nitrification and denitrification during the treatment of wastewater. Pure Water is also expected to reduce the nitrogen load discharged to the ocean and the associated N_2O emissions (Sanitation Districts 2025). Inclusion of the ocean discharge component is consistent with CEQA Guidelines sections 15064(d), in general, and 15064.4(a), specifically, to fully consider and account for Pure Water's GHG impact. A carbon supplement, such as glycerin-based MicroC-2000 manufactured by Environmental Operating Solutions, Inc. (EOSi), would be added to support both denitrification and biological phosphorus removal. The oxidation of the supplemental carbon would result in the release of CO_2; however, this associated GHG footprint would be reduced or eliminated by using supplemental carbon derived from biogenic[2] sources. The "biobased content" of supplemental carbon products can be independently verified by the United States Department of Agriculture's BioPreferred® Program. Several supplemental carbon products have already been certified under BioPreferred® as 100 percent biogenic. As Pure Water would use biobased carbon supplements, if needed based on the nitrogen content of the water, the associated CO_2 emissions do not need to be included in the Scope 1 emission reporting in accordance with IPCC Guidelines (Jacobs 2024). As such, emissions associated with use of supplemental carbon, such as MicroC-2000, are not included in the totals for Pure Water emissions for the purposes of this CEQA analysis.

[2] Biogenic CO_2 refers to CO_2 released from organic matter like plants and animals, essentially part of the natural carbon cycle, while non-biogenic CO_2 comes from fossil fuels, which are carbon sources that have been stored underground for millions of years and are not considered part of the active carbon cycle, meaning burning them adds new carbon to the atmosphere, significantly contributing to climate change; essentially, biogenic CO_2 is considered "recycled" carbon while non-biogenic CO_2 is "new" carbon to the atmosphere.

Mobile sources would include worker/trainee commutes trips, visitor trips, and vendor delivery trips. Stationary sources would include eight backup generators at the AWP Facility that would each be operated for testing/maintenance no more than 1 hour in any single day and up to 30 hours per year. Additional details are provided in Appendix B.

Operational GHG emissions generated by full buildout capacity of 150 MGD from the Joint Treatment Site are shown in **Table 5.6-10**. The data are presented as annual emissions for the year 2036 by source type.

Table 5.6-10
JOINT TREATMENT SITE ANNUAL OPERATIONAL GHG EMISSIONS (2036)

Source	Emissions (MT CO_2e)
Electricity Consumption	55,338
Nitrification/Denitrification	41,668
Mobile	1,012
Stationary	393
Supplemental carbon (biogenic)[1]	15,717
Total Joint Treatment Site Operational Emissions	**98,412**

Note: Total may not add due to rounding. Modeling data are provided in Appendix B

MT = metric tons; CO_2e = carbon dioxide equivalent

[1] Not included in total.

Backbone Conveyance System

Backbone Pipeline

Following construction, the backbone pipeline would not generate emissions or consume energy. There would be some minimal operations including ongoing inspection and maintenance activities associated with the pipeline (e.g., light-duty vehicle trips for patrolling and inspection, minor grading of patrol roads), but emissions or energy consumed would be negligible.

Pump Stations

GHG emissions associated with operation of the backbone pump stations (Sante Fe Pump Station and Whittier Narrows Pump Station) would be generated by the regular testing of the standby generators (stationary sources) and electricity consumed by the pumps used to convey water. Operational emissions generated by the pump stations are shown in **Table 5.6-11**. The data are presented as the annual emissions for the 2036 buildout year by source type. It should be noted there would be occasional trips made by workers visiting the pump station sites for ongoing operations and maintenance; however, these light-duty vehicle trips would be minimal, thereby resulting in negligible emissions.

Table 5.6-11
PUMP STATION ANNUAL OPERATIONAL GHG EMISSIONS (2036)

Source	Emissions (MT CO_2e)
Backbone Pump Station Stationary	10
Backbone Pump Station Electricity Consumption	17,440
Total Pump Station Operational Emissions	**17,450**

Note: Modeling data are provided in Appendix B
MT = metric tons; CO_2e = carbon dioxide equivalent

Summary of Operational Emissions

The combined results of operational GHG emissions for Pure Water's components analyzed at the project level for this GHG analysis are shown in **Table 5.6-12**. It should be noted that the emissions inventory presented below represents emissions for the first full operational year of 2036. These emissions would lessen over time. For example, emissions associated with electricity consumption would be reduced as SCE's renewables portfolio increases to 100 percent renewable by 2045 per the requirements of SB 100. Additionally, mobile source emissions would be reduced over time as cleaner burning vehicles, or zero-emission vehicles, are added to the fleet mix.

Table 5.6-12
TOTAL OPERATIONAL GHG EMISSIONS

Source	Emissions (MT CO_2e)
Joint Treatment Site Electricity Consumption	55,338
Nitrification/Denitrification	41,668
Joint Treatment Site Mobile	1,012
Joint Treatment Site Stationary	393
Backbone Pump Station Stationary	10
Backbone Pump Station Electricity Consumption	17,440
Total Operational Emissions	**115,861**

Note: Totals may not add due to rounding. Modeling data are provided in Appendix B
MT = metric tons; CO_2e = carbon dioxide equivalent

Emissions Comparison with the CAP

Pure Water was analyzed and included in the CAP as the RRWP. Pure Water's components analyzed at the project level for this GHG analysis remain largely unchanged from what was included in the CAP. Specifically, the CAP analyzed the RRWP as including construction and operation of an Advanced Water Treatment Plant (synonymous with the AWP Facility currently proposed), approximately 40 miles of pipelines, three pumping stations, and groundwater injection sites. A comparison summary of estimated emissions from Pure Water's project-level component construction activities and first full operational year with the corresponding emissions estimates for the RRWP as analyzed in the CAP are included in **Table 5.6-13**. Some of the categories (i.e., Electricity [all sources] and Other) are aggregated for clarity and ease of comparison.

Table 5.6-13
SUMMARY OF PURE WATER EMISSIONS ESTIMATES AND DIFFERENCES

Source	Pure Water as Proposed (MT CO_2e)	CAP RRWP GHG Emissions (MT CO_2e)	Difference in GHG Emissions Totals (MT CO_2e)
Construction			
Backbone Pipeline	69,259	70,506	-1,247
Backbone Pump Stations	1,784	633	1,151
Well Facilities	N/A	383	-383
Joint Treatment Site	8,415	10,895	-2,480
Construction Total	**79,458**	**82,417**	**-2,959**
Operation			
Electricity (all sources)[1]	72,778	84,090	-11,312
Nitrification/Denitrification	41,668	5,340	36,328
Other[2]	1,415	N/A	1,415
Annual Operations Total (1st Full Operational Year)	**115,861**	**89,430**	**26,431**

Source: HELIX 2025

Note: Totals may not add due to rounding.

MT = metric tons; CO_2e = carbon dioxide equivalent; CAP = Climate Action Plan; RRWP = Regional Recycled Water Program; GHG = greenhouse gas; N/A = not applicable

[1] Electricity sources include the Joint Treatment Site electricity consumption and Conveyance Pump Station electricity consumption.

[2] Other includes Mobile, Joint Treatment Site Stationary Combustion, and Conveyance Pump Station Stationary Combustion.

As shown in **Table 5.6-13**, based on a project-level GHG analysis, emissions estimated for Pure Water's components, as currently proposed, vary from what was included in the CAP. This is primarily due to refined assumptions that were not previously available when the CAP was prepared. For example, with the pipeline alignment now known, plus the refined schedule and construction methods, construction emissions previously forecasted were 82,417 MT CO_2e, which are higher than the estimates in this EIR of 79,458 MT CO_2e. Likewise, refined process emissions estimates have been possible based on site-specific nitrogen concentrations and updated IPCC guidance. Where the CAP estimated the RRWP would result in 5,340 MT CO_2e per year from nitrification/denitrification, Pure Water is now estimated to result in 41,668 MT CO_2e per year from the same process.

As part of the ongoing implementation and monitoring efforts, Metropolitan assessed the impact of the updated project-level Pure Water GHG emissions estimates on Metropolitan's carbon budget for consistency with the 2020 CAP (Rincon 2024).[3] The assessment considered three scenarios for the carbon budget GHG emissions forecast based on Metropolitan's 2020 Urban Water Management Plan (UWMP) water demand forecast. The forecasted annual and cumulative emissions across all Metropolitan operations for each of the three future scenarios was revised. The three scenarios are intended to capture the full range of potential future emissions. The scenarios include: a high emission scenario where there are multiple dry years and high operational emissions; an average emission scenario which assumes a single dry year demand level and average operational emissions; and a low

[3] Pure Water's project-level GHG emissions estimates have been refined since completion of Rincon's 2024 report. The refined emissions estimates are lower than what was considered; therefore, the analysis and conclusions in Rincon's 2024 report remain applicable.

emission scenario associated with an average demand year and low operational emissions. The forecast was further adjusted to incorporate SB 100 (mandating 100 percent carbon-free electricity by 2045), which will reduce GHG emissions associated with electricity consumption over time. The cumulative impact on the carbon budget was then evaluated to determine if Metropolitan can reach its emissions targets using its established CAP GHG reduction measures, or if additional GHG mitigation measures are required. This analysis included actual emissions for Metropolitan-wide GHG emissions for the years 2021 and 2022, which were forecasted in the CAP but for which Metropolitan now has actual data.

The starting year for the CAP's carbon budget is 2005 as it is the first year for which Metropolitan has an annual GHG inventory; annual inventories are required to track the carbon budget accurately. Metropolitan was below its milestone budget for the 2005-2022 period. During this period, Metropolitan emitted approximately 5,408,096 MT CO_2e, representing just over half (55 percent) of the maximum emissions budgeted through 2022. The overall carbon budget has 9,252,380 MT CO_2e remaining for the 2023-2045 period. This puts Metropolitan on track to achieve its 2030 GHG emissions reduction target.

It was determined that, with the updated estimates for Pure Water, Metropolitan would remain within its allocated carbon budget through 2030 for all three scenarios. By 2045, Metropolitan would remain under the carbon budget for both the low and average scenarios. As originally found in the CAP, Metropolitan would exceed the carbon budget by 2045 under the highest-emissions scenario without implementing GHG reduction strategies. As listed in the CAP, Metropolitan has strategies to reduce overall GHG emissions by 2,003,695 MT CO_2e using Phase 1 actions under the high emissions scenario. Therefore, the forecasted carbon budget exceedance of 1,522,195 MT CO_2e under the high emissions scenario can be addressed by implementation of the 2020 CAP and Pure Water would be consistent with the CAP through both 2030 and 2045 (Rincon 2024).

In summary, the key takeaways from the comparison of forecasted emissions and impacts of Pure Water on the carbon budget included:

- Before CAP implementation, Metropolitan is projected to reach its 2030 targets under all three emissions forecast scenarios (low, average, and high) analyzed and reach its 2045 targets under both the low and average emissions forecast scenarios.

- With CAP implementation, Metropolitan is projected to reach its 2030 and 2045 targets under all three emission forecast scenarios. That is, implementation of the measures required by the CAP would enable Metropolitan to reach its 2045 targets even under the high emissions forecast scenario.

- As such, while the updated Pure Water GHG emissions estimates are higher than those in the CAP, they are not high enough to affect Metropolitan's ability to achieve its GHG emission reduction targets; therefore, the CAP accommodates Pure Water and its associated project-level GHG emissions. In addition, Pure Water's GHG emissions would be tracked as part of Metropolitan's overall carbon budget with organization-wide CAP measures implemented to reduce Metropolitan's GHG emissions over time such that GHG emissions remain within the carbon budget.

Therefore, Pure Water's project-level components would be consistent with Metropolitan's qualified CAP. Pursuant to CEQA Guidelines Section 15064.4 and 15183.5, Pure Water would not directly or

indirectly generate GHG emissions that may have a significant impact on the environment, and Pure Water would have a **less-than-significant impact**.

5.6.5.2 Topic 2: Conflict with GHG Reduction Plan

Would Pure Water conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Applicable plans, policies, and regulations include Metropolitan's CAP, SB 32, EO B-55-18, the 2022 Scoping Plan, and AB 1279. As discussed under threshold (a), Pure Water would be consistent with Metropolitan's CAP because (1) Pure Water's GHG emissions would be tracked as part of Metropolitan's overall carbon budget with organization-wide CAP measures implemented to reduce Metropolitan's GHG emissions over time such that GHG emissions remain within the carbon budget; and (2) Pure Water would incorporate applicable CAP reduction measures. Also, by being consistent with the CAP, Pure Water would also be consistent with state GHG emission reduction plans, policies, and regulations, such as the 2022 Scoping Plan, SB 32, EO B-55-18, and AB 1279 because the GHG emission reduction targets established by these plans, laws, and policies are incorporated into and consistent with Metropolitan's GHG emissions reduction targets. Therefore, Pure Water would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and **no impact** would occur.

5.6.6 Level of Significance Before Mitigation

Impacts associated with GHG emissions would be **less than significant**. There would be **no impact** associated with conflicts with a GHG reduction plan.

5.6.7 Mitigation Measures

Impacts associated with GHG emissions would be less than significant; therefore, no mitigation is required.

5.6.8 Level of Significance After Mitigation

Impacts associated with GHG emissions would be **less than significant without mitigation**. There would be **no impact** associated with conflicts with a GHG reduction plan without mitigation.

5.6.9 References

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5.7 HAZARDS AND HAZARDOUS MATERIALS

This section addresses the potential hazards and hazardous materials impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable regulations, and an evaluation of potential impacts. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

HAZARDS AND HAZARDOUS MATERIALS LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is based on readily available, general information derived from applicable resources and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Hazardous Materials Assessment prepared for the Joint Treatment Site and backbone pipeline (Ninyo & Moore 2025; Appendix F1) and a memorandum prepared to address per- and poly-fluoroalkyl substances (PFAS; AECOM/Brown & Caldwell 2025; Appendix F2).

5.7.1 Existing Conditions

5.7.1.1 Hazardous Materials

For purposes of this EIR, a "hazardous material" is defined by California Health and Safety Code Section 25501(n) as any material that, "because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment…." Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material which a handler or the administering agency has a reasonable basis for believing that it "would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment."

The Hazardous Materials Assessment (Ninyo & Moore 2025) reflected the results of a database search with a quarter-mile radius from the Joint Treatment Site and backbone alignment, and a 1-mile radius from the Workforce Training Center site due to the types of uses proposed there. Together, this area is

referred to as the hazardous materials study area. Based on the database search, the Hazardous Materials Assessment identified recognized environmental conditions (RECs) in the hazardous materials study area. RECs indicate the presence or likely presence of hazardous substances or petroleum products in, on, or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions (i.e., environmental conditions that do not pose a threat to human health or the environment) are not RECs.

Identification of RECs includes the following three categories: existing RECs (as defined above); Historical RECs (HRECs); or Controlled RECs (CRECs). HRECs and CRECs are defined as follows:

- HREC – A Historical Recognized Environmental Condition is defined as "a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by a regulatory authority or authorities without subjecting the property to any controls (for example, activity and use limitations)" (ASTM International 2021). An HREC is an environmental condition, which in the past, would have been considered an REC, but currently may or may not be considered an REC. An example of an HREC may be a former gas station where a release of gasoline had occurred, but the site was cleaned up to an unrestricted land use standard.

- CREC – A Controlled Recognized Environmental Condition is defined as a "recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities [for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by a regulatory authority], with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, activity use limitations or other property use limitations)" (ASTM International 2021). An example of a CREC could be a former gas station where a release of gasoline has been cleaned up to a commercial use standard but does not meet unrestricted residential cleanup criteria.

To identify RECs (including existing, historical, or controlled) in the hazardous materials study area, the Hazardous Materials Assessment (Ninyo & Moore 2025) included historical research; a review of federal, state, tribal, and local environmental databases; regulatory agency inquires; and site reconnaissance. The likelihood of specific areas associated with the RECs being contaminated by hazardous materials was ranked as high, moderate, or low, and those areas were defined by a risk class of high, moderate, or low based on the following descriptions:

- High – Property with known or probable contamination within or in proximity to proposed project-level facilities and components. An example of a property in this category would be a leaking underground storage tank facility where remediation had not been started or was not yet finished.

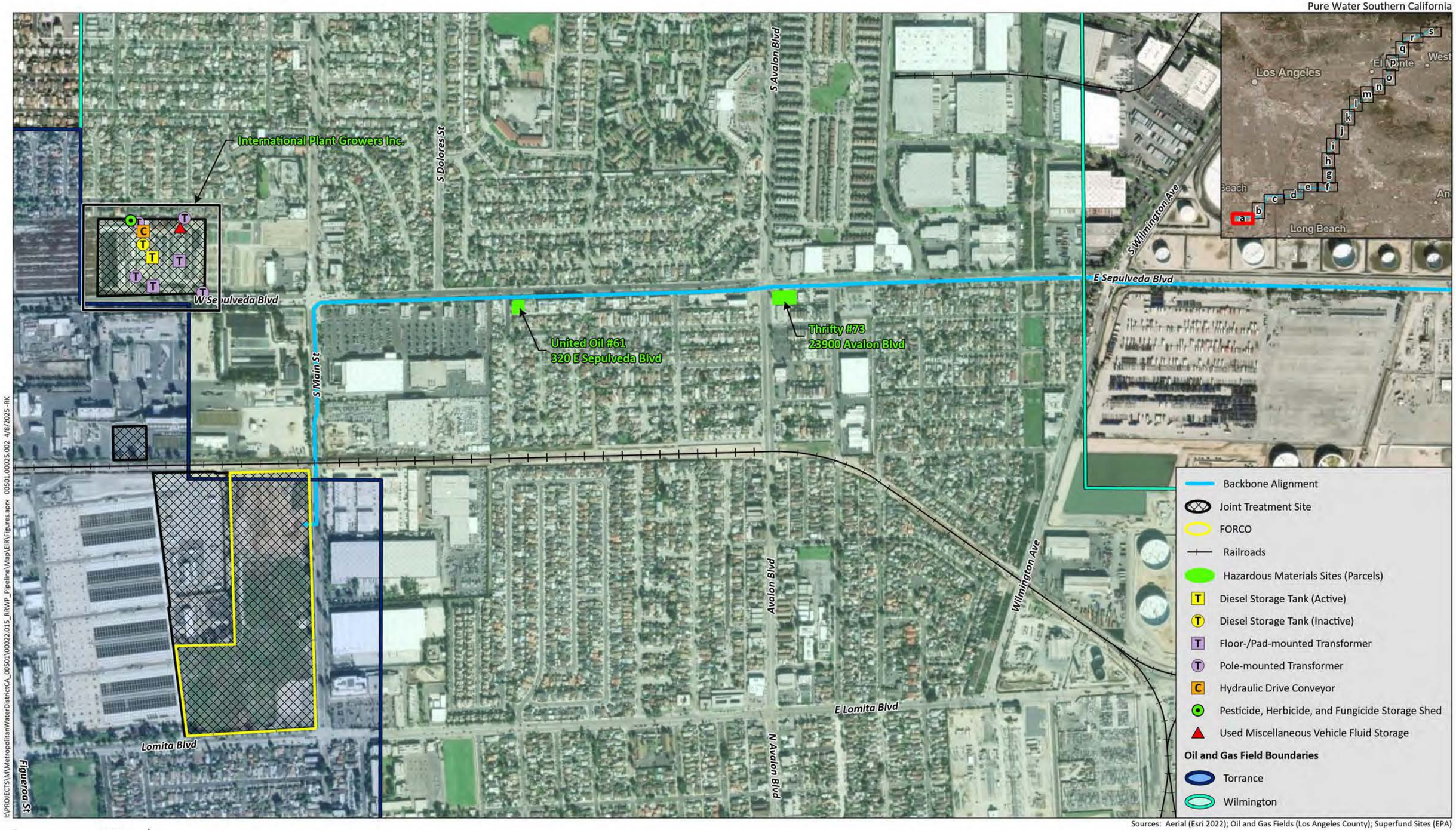
- Moderate – Property with potential or suspected contamination within the hazardous materials study area. Examples of properties in this category would be leaking underground storage tank facilities in final stages of remediation or in post-remediation monitoring. A second example would be a property with known use and storage of hazardous materials which had received violation notices from an inspecting agency or where visual evidence of inadequate chemical

and storage practices (such as significant staining) were observed but where no environmental assessments had occurred. Also included in this category are facilities where underground storage tanks are likely present and/or facilities that have used significant quantities of hazardous materials but appear to be abandoned by their former operators.

- Low – Property which uses or stores hazardous materials within the hazardous materials study area but with no significant violations, known releases, or evidence of inadequate chemical handling practices. Example properties would be underground storage tanks or dry-cleaning facilities with no documented releases or where remediation of previous releases had been completed.

RECs in the hazardous materials study area associated with specific properties are provided in **Table 5.7-1** and shown on **Figures 5.7-1a** through **5.7-1s**.

Pure Water Southern California



Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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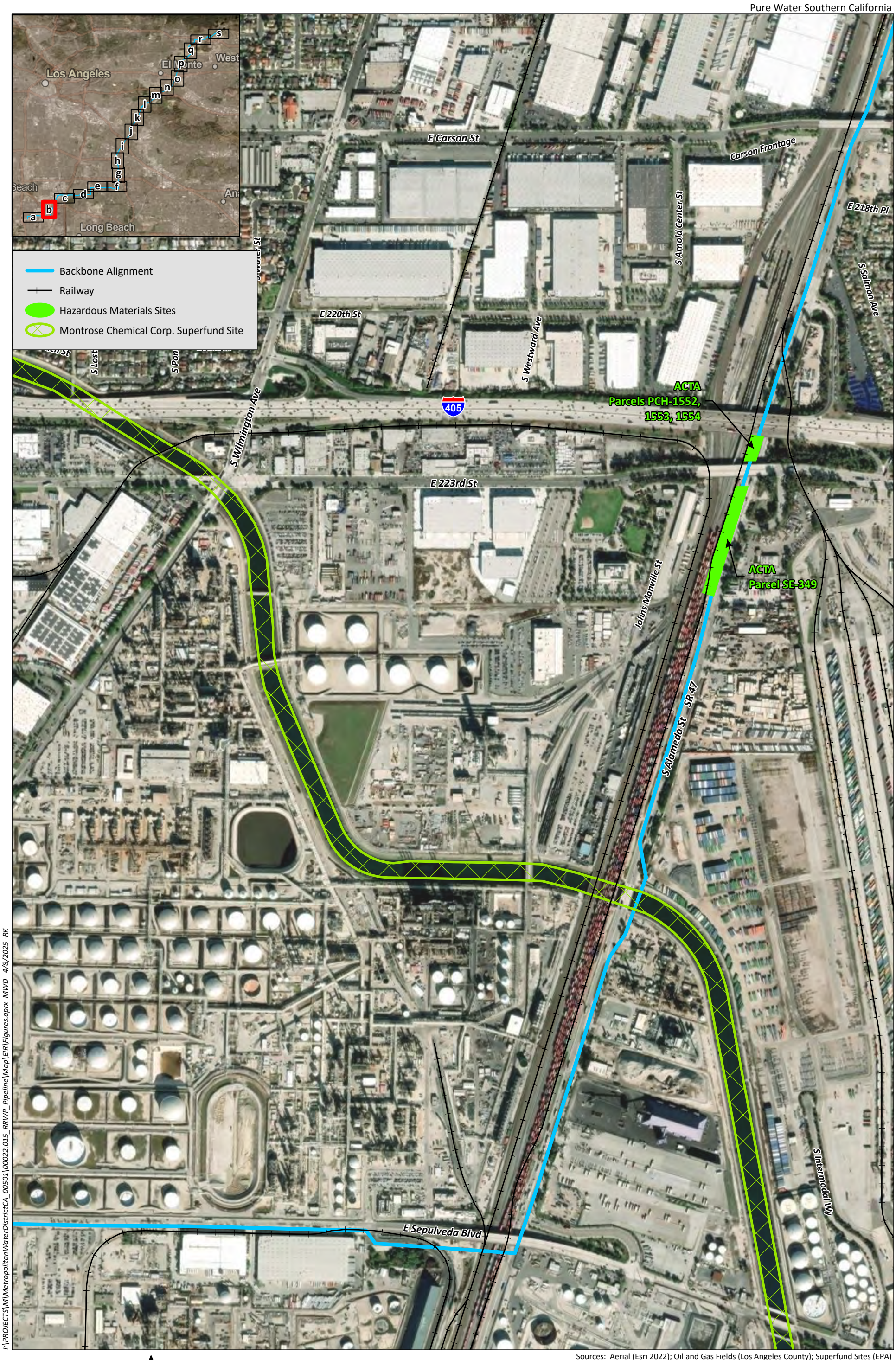
PURE WATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1a



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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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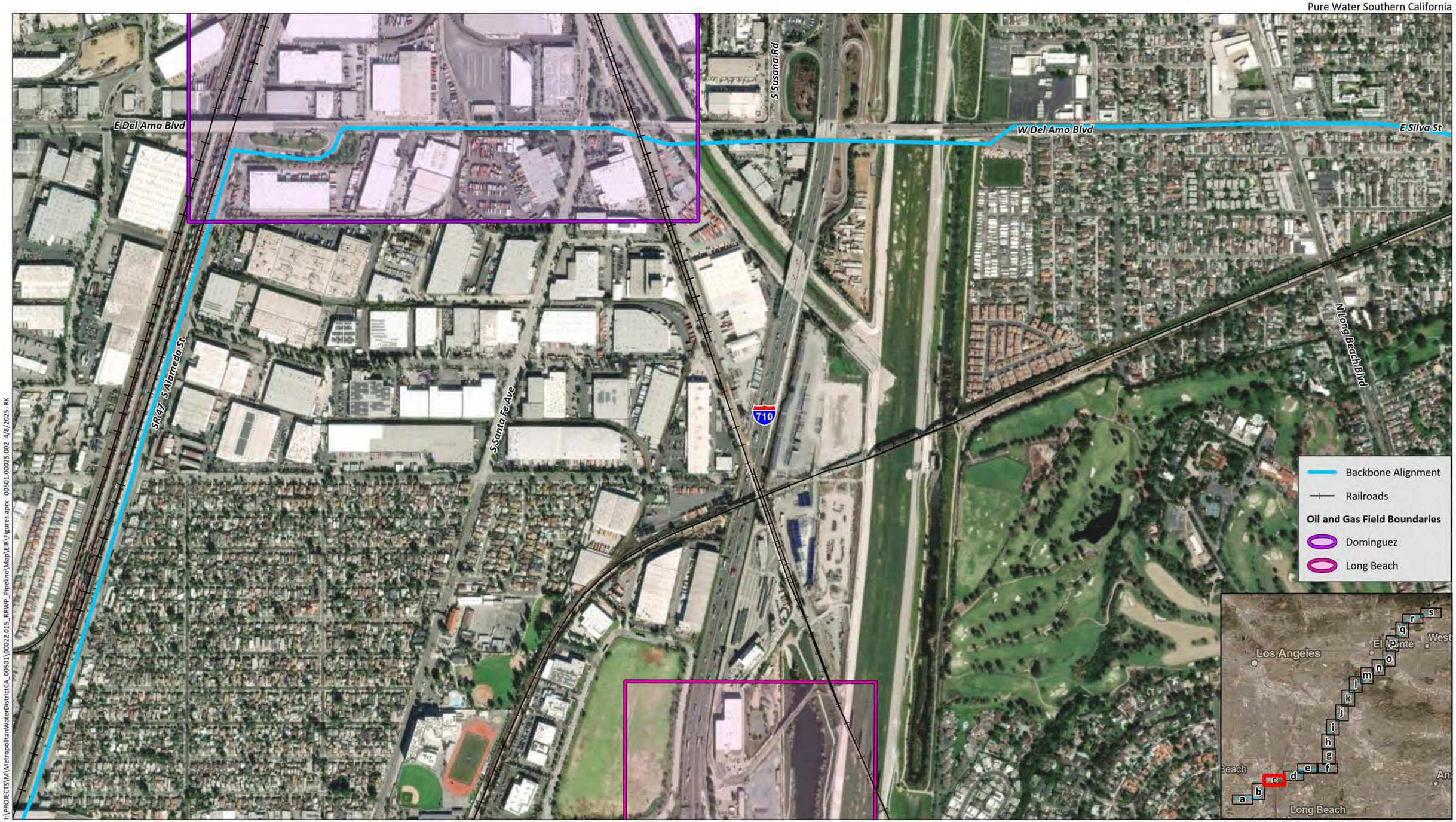
PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1b



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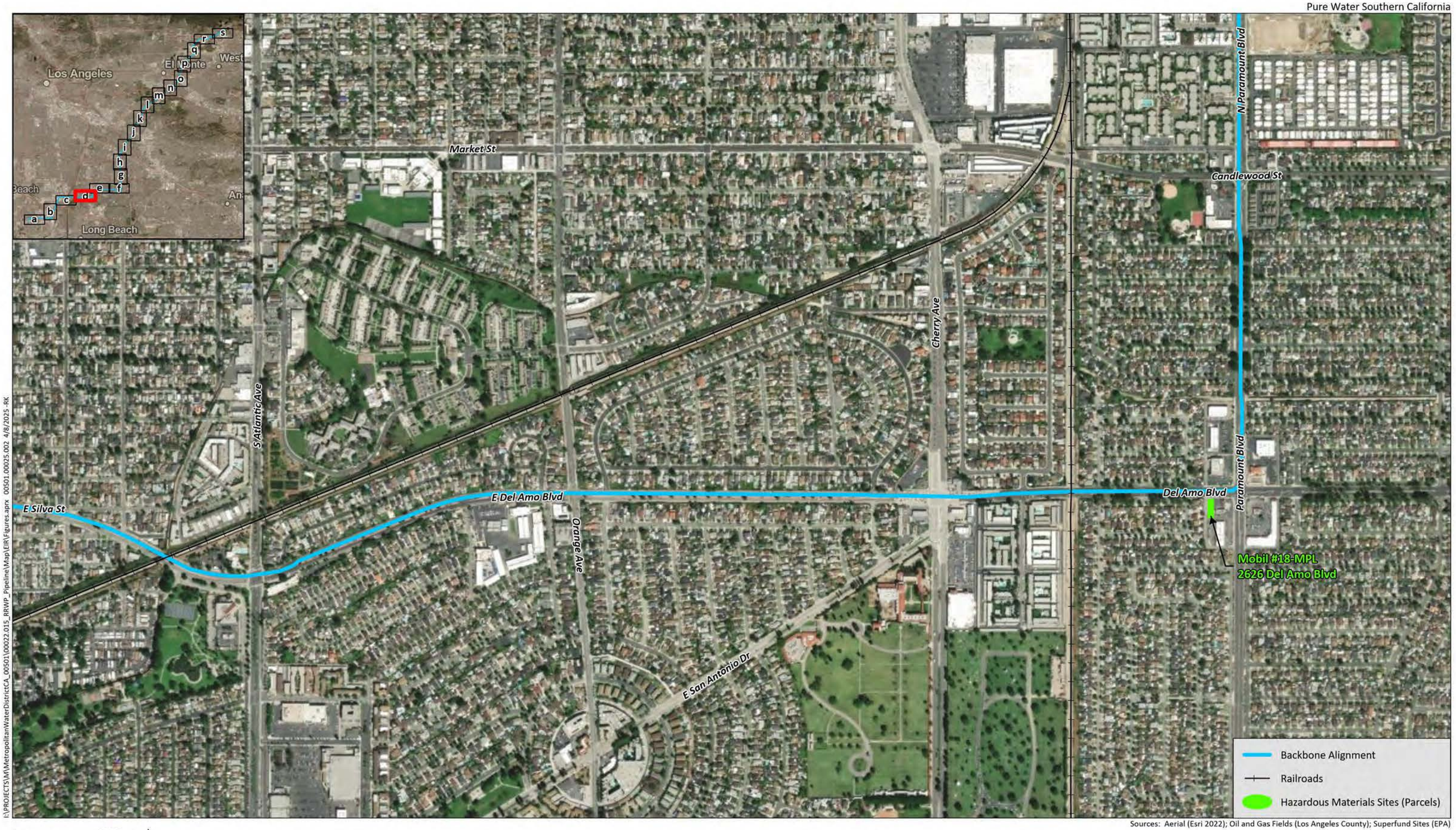
Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1c



Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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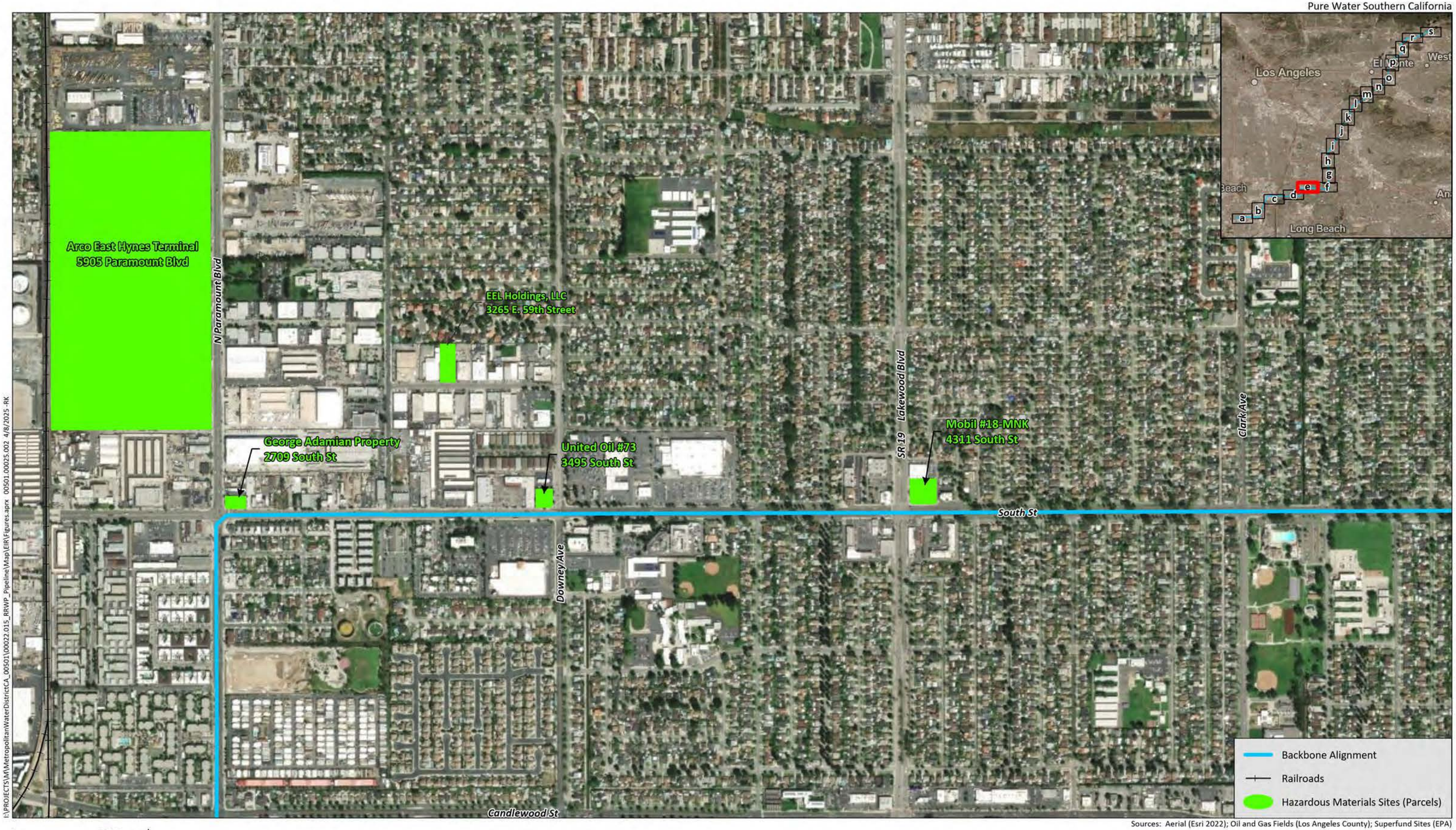
PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1d



Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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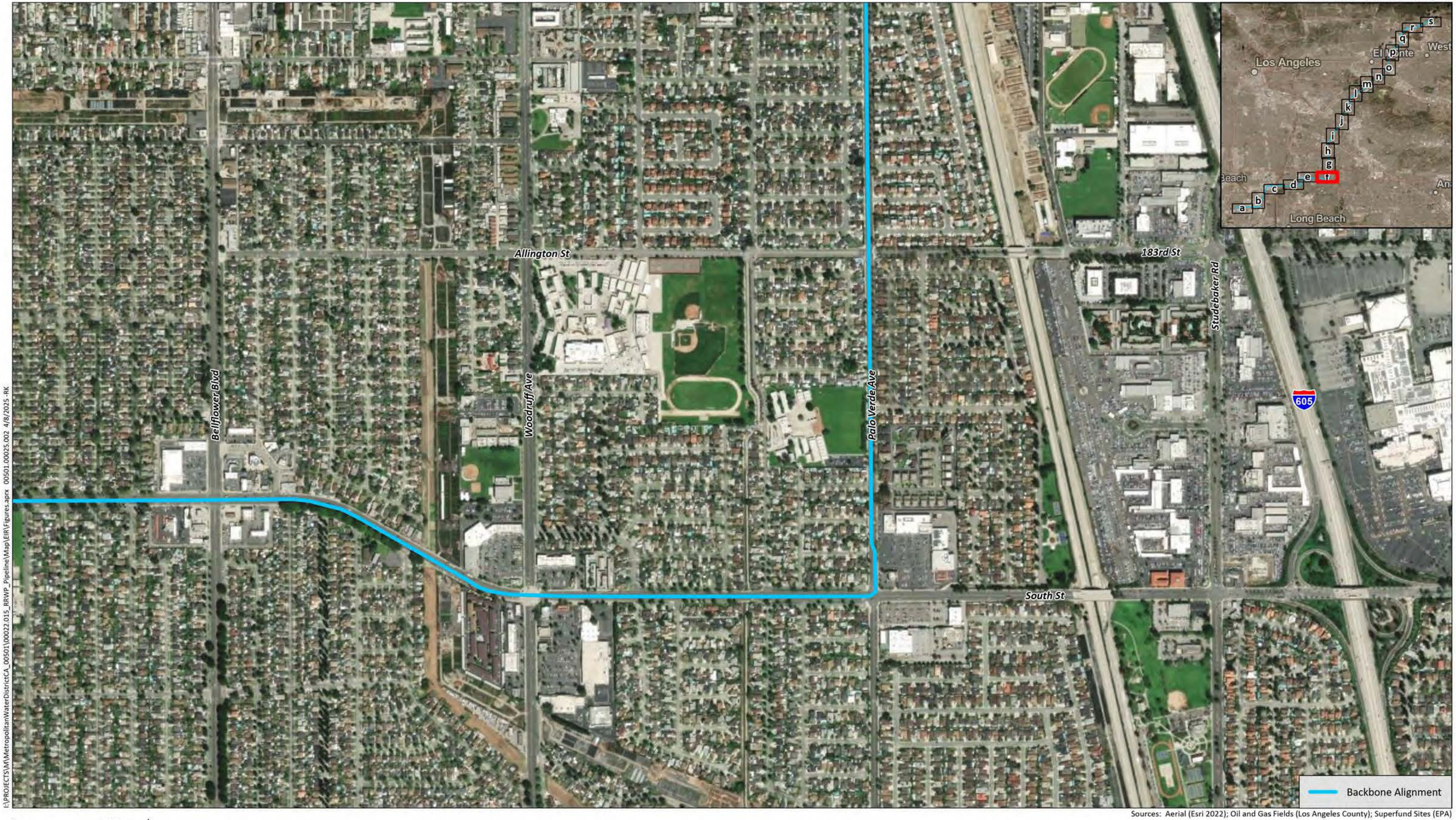
PURE WATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1e



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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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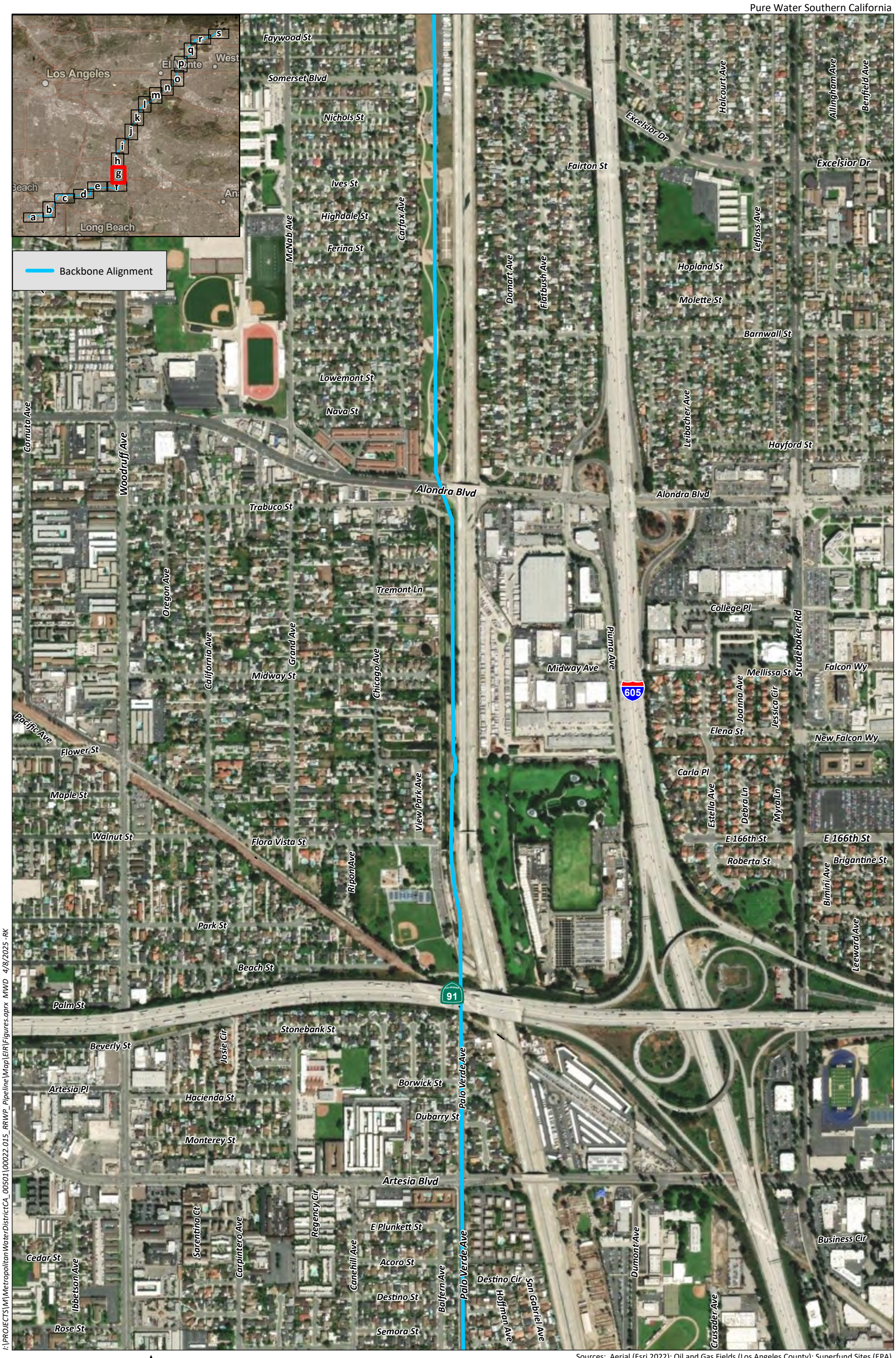
PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1f



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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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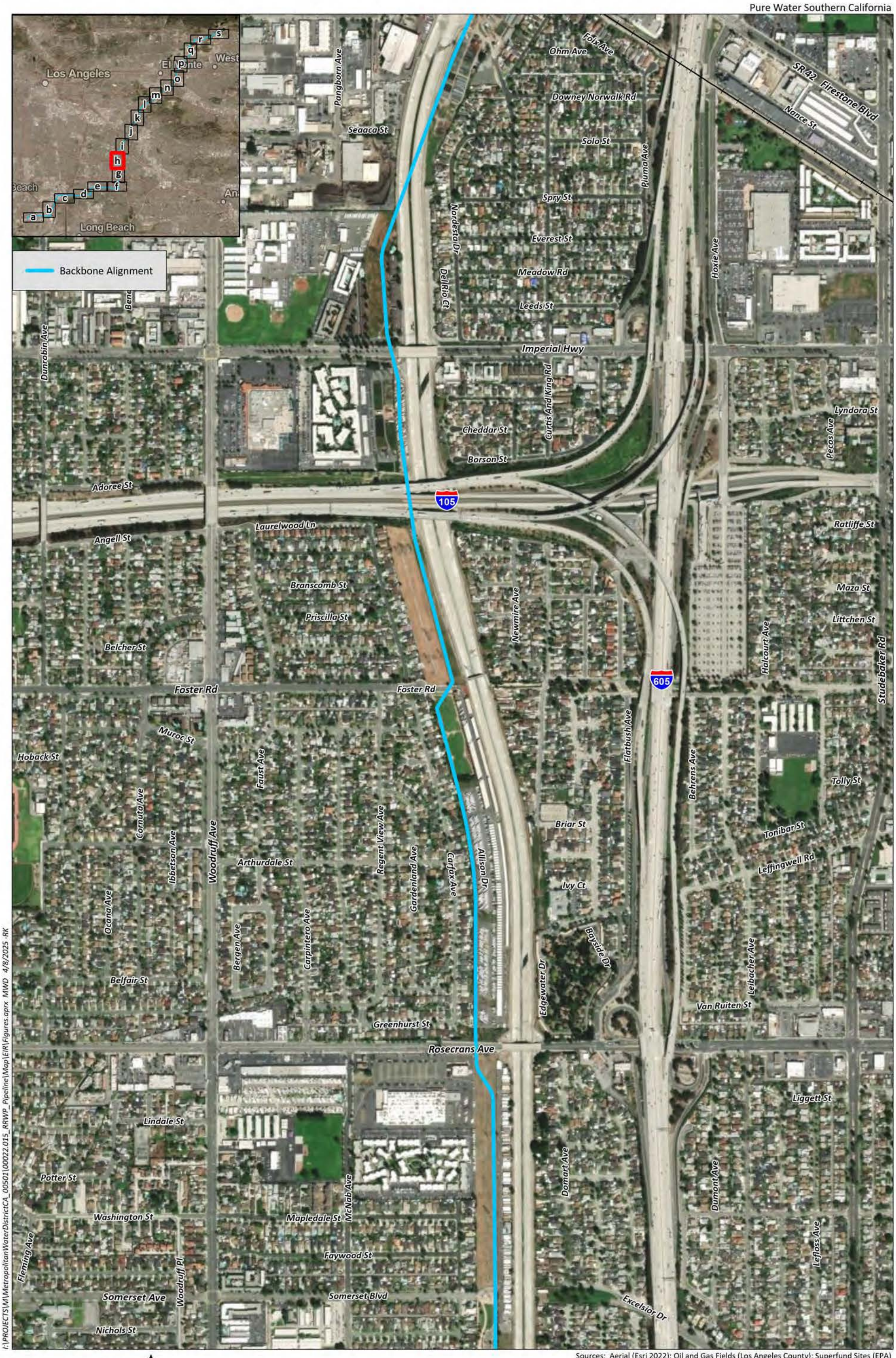
PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1g



Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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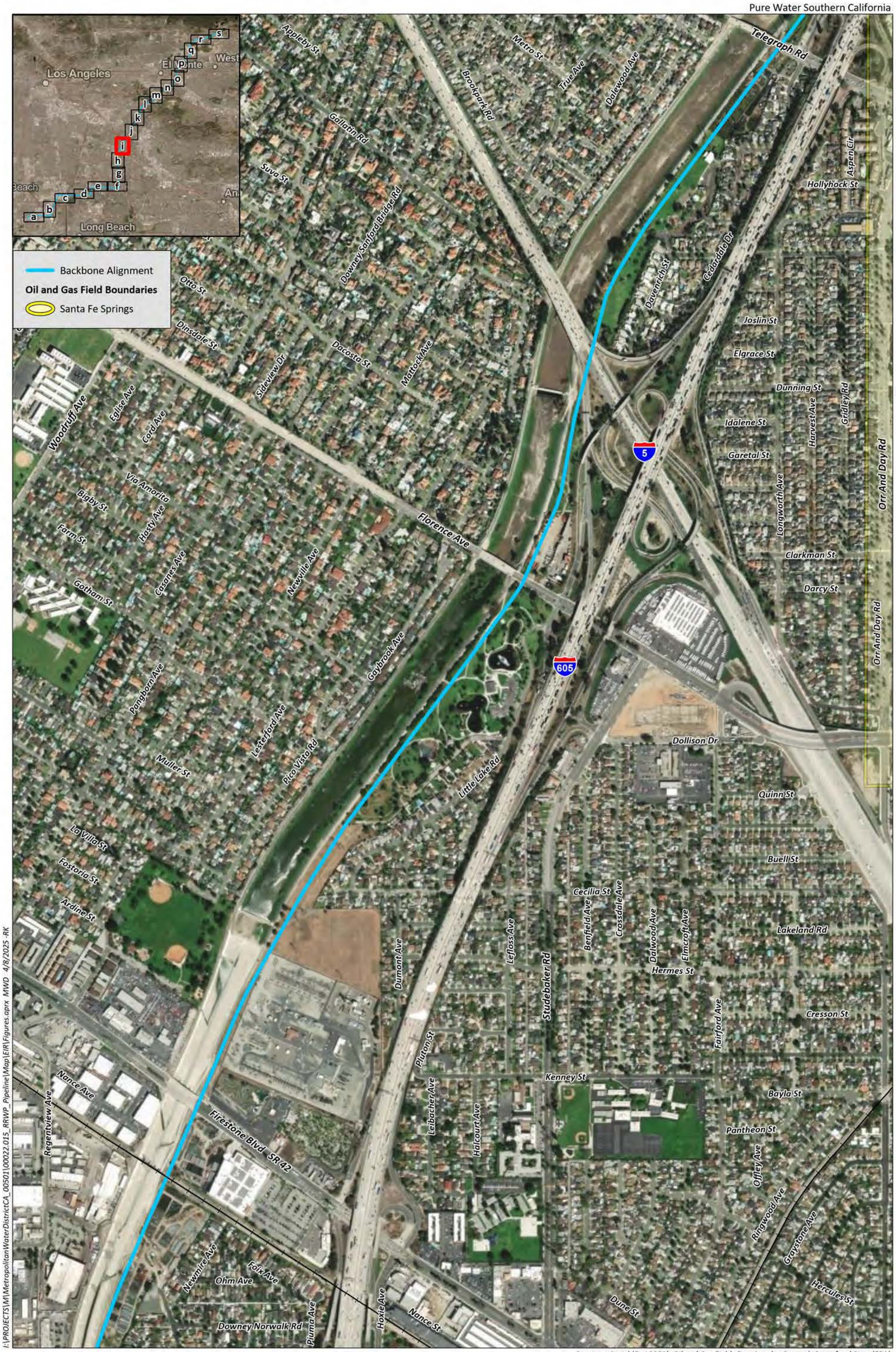
PURE WATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1h



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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

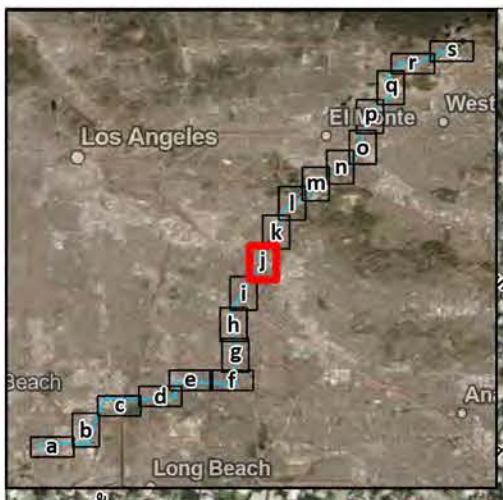
0 700 Feet

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1i

Pure Water Southern California



Backbone Alignment

Superfund Site

Oil and Gas Field Boundaries

Santa Fe Springs

Hasty Ave
Lochinvar Dr
Nan St
Bert St
Schooling Rd
Abbotsford Rd
Washington Blvd
Lochinvar St
Lundahl Dr
Bennington Ave
Farmland Ave
Rockne Ave
Norwalk Blvd
Lemoran Ave
Bascom St
Woodhue St
Cord Ave
Wheelock St
Poinciana St
Summerfield Ave
Shadyside Ave
Lindenvale Rd
Bradwell Ave
Waddell St
Benavon St
Godoy St
Millergrove Dr
Slauson Ave
Aeolian St
Vicki Dr
Flallon Ave
Decosta Ave
Burke St
Planter St
Rivera Rd
Sideview Dr
Myron St
Aero Dr
Shade Ln
Masoncrest Dr
Homestead St
Enterprise Ave
Walnut St
605
Maxine St
Cultura St
Los Nietos Rd
Mersin Pl
Roxabel St
Orange Ave
Coopergrove Ave
La Docena Ln
Sibert St
Bluejay Ln
Navojoa Pl
Morrill Ave
Corby Ave
Terradell St
Greenvale Ave
Sunglow St
Placita Pl
Florpark St
Roma St
Pico Vista Rd
Pioneer Blvd
Danby Ave
Broaded St
Pike St
Clarinda Ave
Bartley Ave
Charlesworth Rd
Alburtis Ave
Fredson St
Jersey Ave
Arlee Ave
True Ave
Dalewood Ave
Whiteland St
Orr And Day Rd
Harnden St
Nova St
Willins St
Flossmoor Rd
Houghton Ave
Willake St
Claymore St
Smith Ave
Telegraph Rd
Cedardale Dr

0 700 Feet

Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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PURE WATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1j

Backbone Alignment

Oil and Gas Field Boundaries

Whittier

Tile St
Speedway
Delandale Ave
Durfee Ave
Pico Ct
Stephens St
Brasher St
Passons Blvd
West Blvd
Church St
Tobias Ave
Gregg Rd
Rosemead Blvd
San Gabriel Pl
SR 19
Verner St
Lindsey Ave
Jackson St
SR 72
Whittier Blvd
Catherine St
Almo St
Underwood St
Glencannon Dr
Havenwood Dr
Citronell Ave
Dowling Ave
Kilgarry Ave
Lemoran Ave
Passons Blvd
Havenwood St
Townley Dr
Eglise Ave
Rosehedge Dr
Bradhurst St
Mines Ave
Aldrich St
Mines Ave
Cord Ave
Leona Joan Ave
Millux Ave
Balfour St
Rimbank Ave
Marjorie St
Rieshel St
Haney St
Pico Vista Rd
Homebrook St
Carron Dr
Wampler St
Washington Blvd
Bradwell Ave
Bartley Ave
Pioneer Blvd
Milna Ave
Choisser St
Saragosa St
Flony St
Winchell St
Vicki Dr
Gilly Ave
Dicky St
Mines Blvd
Pioneer Blvd
Danby Ave
Rose Hedge Dr
Dunlap Crossing Rd
Norwalk Blvd
Bexley Dr
605
Nobles Ave
Juarez Ave
Esperanza Ave
Eduardo Ave
Obregon St
Brian Ct
Sherrill St
Lyle Ave
Orange Grove Ave
Mesagrove Ave
Ben Alder Ave
Whittier Greenway Trl
Floral Dr
Adele Ave
Lockheed Ave
Orange Dr
Redman Ave
Rose Dr
Orchard Ave
Morrill Ave
Dorland St
Pleasant Wy
McNees Ave
Rockne Ave
Holbrook St
Morrill Ave
See Dr
Rincon Dr
Loch Avon Dr
Loch Lomond Dr
Townley Dr
Boer Ave
Hadley St
Reichling Ln
Glengarry Ave

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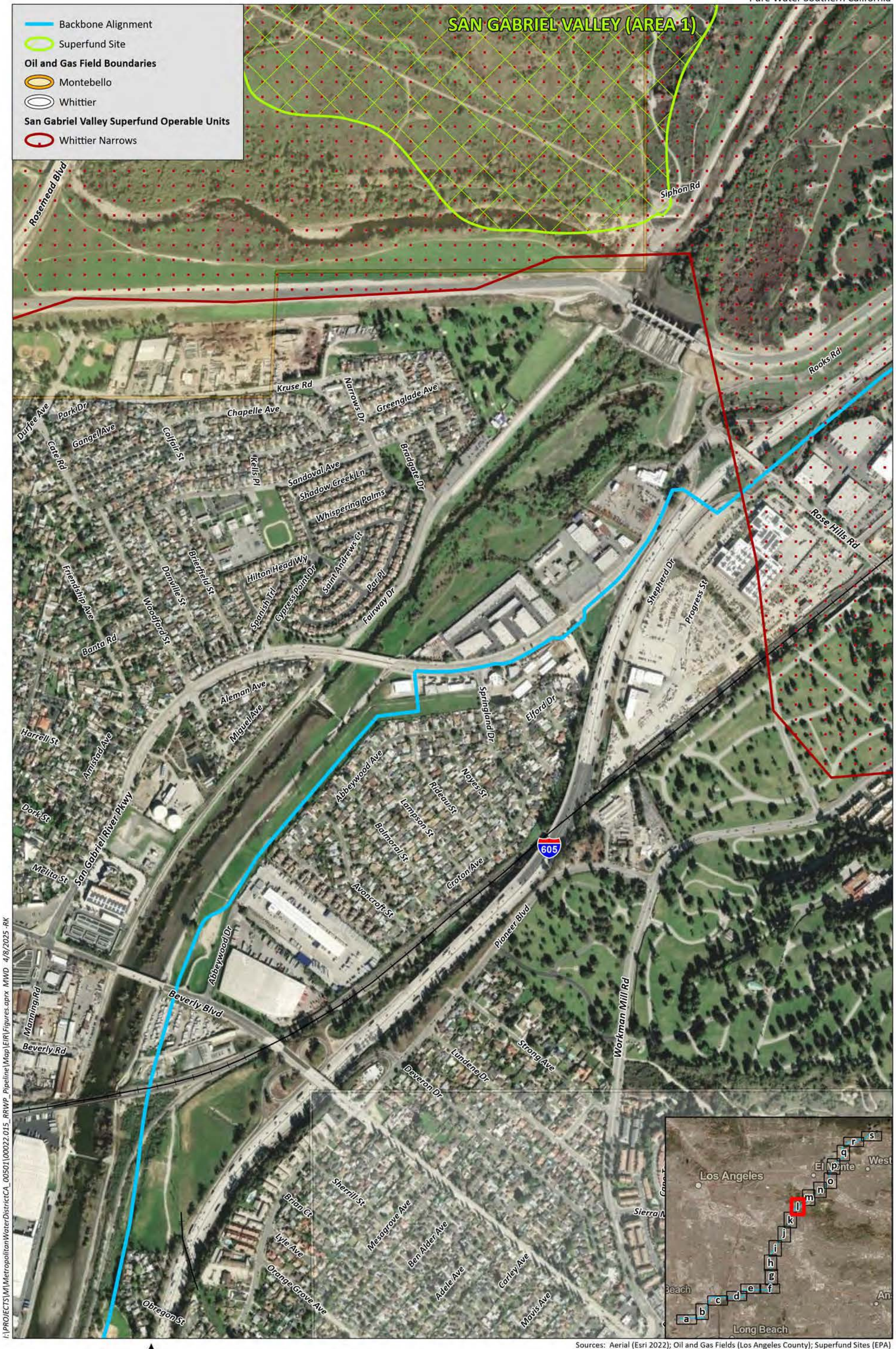
0 700 Feet

Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1k



Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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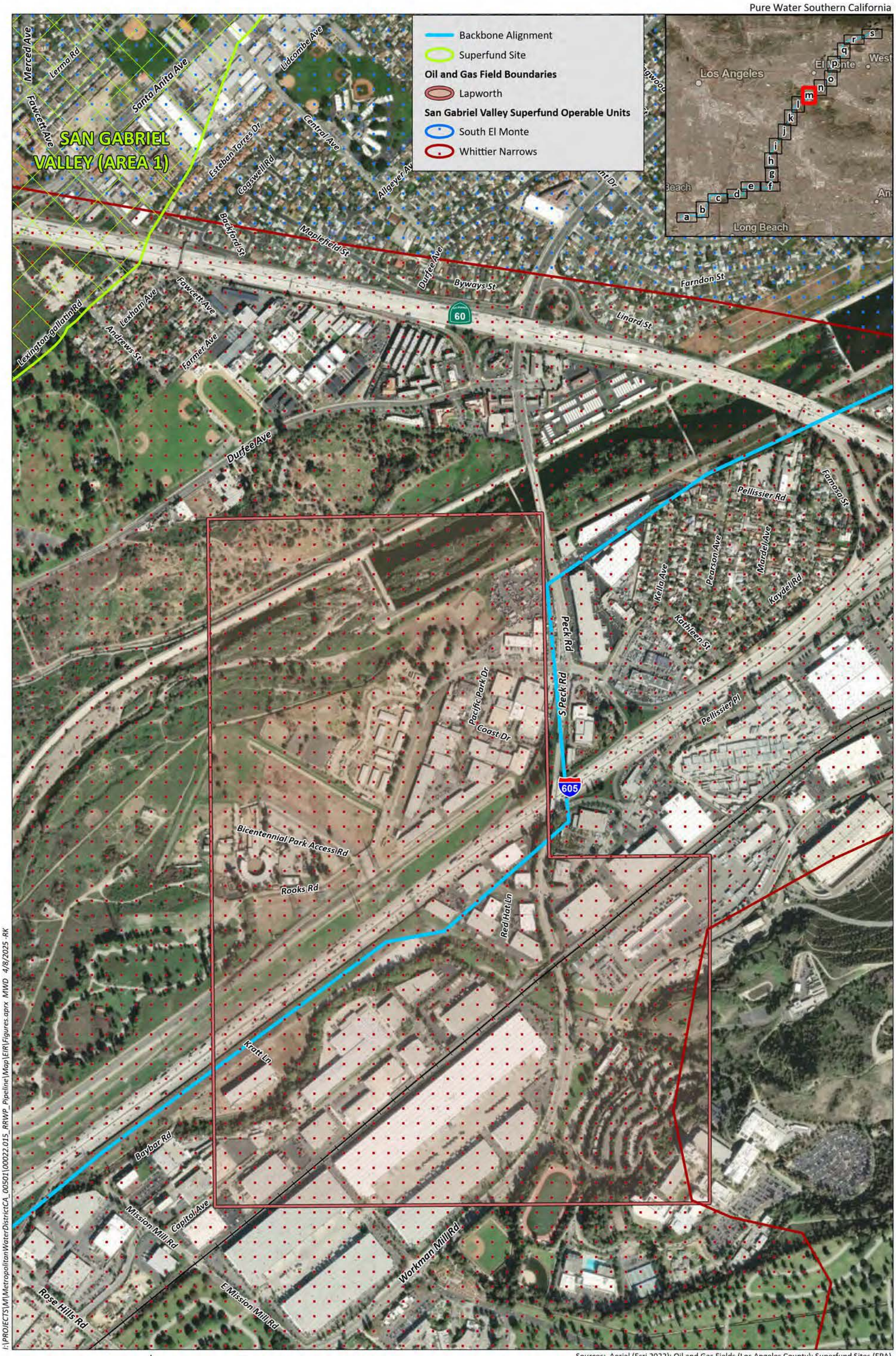
PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1l



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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1m

Backbone Alignment
Superfund Site

San Gabriel Valley Superfund Operable Units

Baldwin Park
Puente Valley
South El Monte
Whittier Narrows

SAN GABRIEL VALLEY (AREA 1)

SAN GABRIEL VALLEY (AREA 2)

Cogswell Rd
Redstone St
Allgeyer Ave
N Peck Rd
Maxson Rd
Morehouse St
Bonwood Rd
Pineville St
Marywine St
Klingerman St
Durfee Ave
Felipe St
Bryce Rd
Weaver St
Fineview St
Bunker Ave
Ghosen St
Caminar Ave
Clinton St
Barringer St
Rush St
Delnice Ave
Valwood Ave
Parkway Dr
Burkett Rd
Ramer St
Silverbay Ave
Fruitvale Ave
Herb St
Thienes Ave
Rumford Ave
Valley Blvd
Denholm Dr
Dahlia Ave
Magnolia St
Poinsettia St
Peach
Cedar
Birch
Oak
Ash
N Brookside
N Riverside
Elmwood
Greenwood
Alpine
Cascade S
Country Club
S Parkwood
Redwood
Evergreen
Acorn
Balsa
Cherry
Plum
S Brookside
S Riverside
605
Baseldale Ave
S Caraway Dr
S Belgreen Dr
Hansford Ave
Goodhart Ave
Coleford Ave
Fairplain Ave
Grossmont Dr
Bunbury Dr
Guinea Dr
Fontenoy Ave
Ankerton St
Loumont St
Crossroads Pkwy N
Delamare Dr
Channelwood Dr
Lacewood Dr
Gemwood Dr
Rolling Greens Wy
Famosa St
Pellissier Pl
Workman Mill Rd
Cambray Dr
Via Sur Ave
Thoroughbred Wy
Paseo Verde
60

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Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

N

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1n

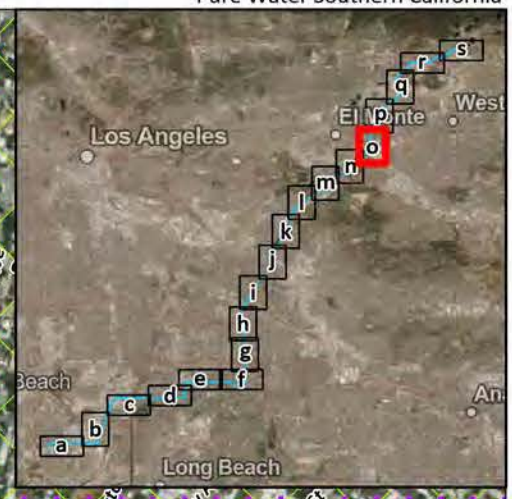
Backbone Alignment

Superfund Site

San Gabriel Valley Superfund Operable Units

Baldwin Park

South El Monte



SAN GABRIEL VALLEY (AREA 2)

Aukland St
Finchley St
Barnes Ave
Waltham St
Patritti Ave
Syracuse Ave
Duthie St
Cosbey Ave
Athol St
Mangum St
Bess Ave
Torch St
Harnett Ave
Gilman Rd
Bannister Ave
Maxson Rd
Deana St
Montrose St
Muirfield St
Oakhurst St
Doral
Somerset St
Stonybrook St
Ferris Rd
Belcroft Ave
Windsong St
Wildwood St
Pinehurst St
Contry Side St
Exline St
10
Garvey Ave
Dalewood St
Piniero Pl
Nolina Ave
Frazier St
Amar Rd
Judith St
Leorita St
Ledford St
Hensel St
Farnell St
Stoddard Wy
605
Louden Ln
N Baldwin Park Blvd
E Temple Ave
Cloverleaf Dr
Rumford Ave
N Covina Ln
Perez Pl
Railroad Ave
E Nelson Ave
E Arillo St
E Senora St
Ramada Ave
Clogston Dr
N Riverside
Elmwood
S San Fidel Ave
Proctor St
S San Angelo Ave
Santa Mariana Ave
S Covina Blvd
S Basetdale Ave
S Collwood Ave
S Ralli Ave
Orange Blossom Ave
Valley Blvd
Pitches Pl
Vineland Ave
Stichman Ave

Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

N

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PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1o

Backbone Alignment

Superfund Site

San Gabriel Valley Superfund Operable Units

Baldwin Park

Hemlock St
Cherrylee Dr
Hallwood Dr
Roseglen St
Lower Azusa Rd
Brinnon St
Ranchito St
Bannister Ave
Mulhall St
Maxson Rd
Emery St
Star St
Durfee Ave
Rivergrade Rd
Brooks Dr
Spring St
Little John St
Los Angeles St
605
Schabarum Ave
Durbin St
SAN GABRIEL VALLEY (AREA 2)
Summer Ln
Rhodes Ln
Parkview Dr
Blenheim St
Salisbury St
Royston St
Barnes Ave
Syracuse Ave
Patritti Ave
Aukland St
Finchley St
Chelsfield St
Westcott Ave
Waco St
Ramona Blvd
Lambert Ave
Gilman Rd
Harnett Ave
Kerrwood St
San Gabriel River Pkwy
Cosbey Ave
Egil Ave
Cleo St
Francisquito Ave
Atriol St
Mangum St
Nolina St
Emery Ave
Frazier St
Corak St
Earl Ave
Cosbey St

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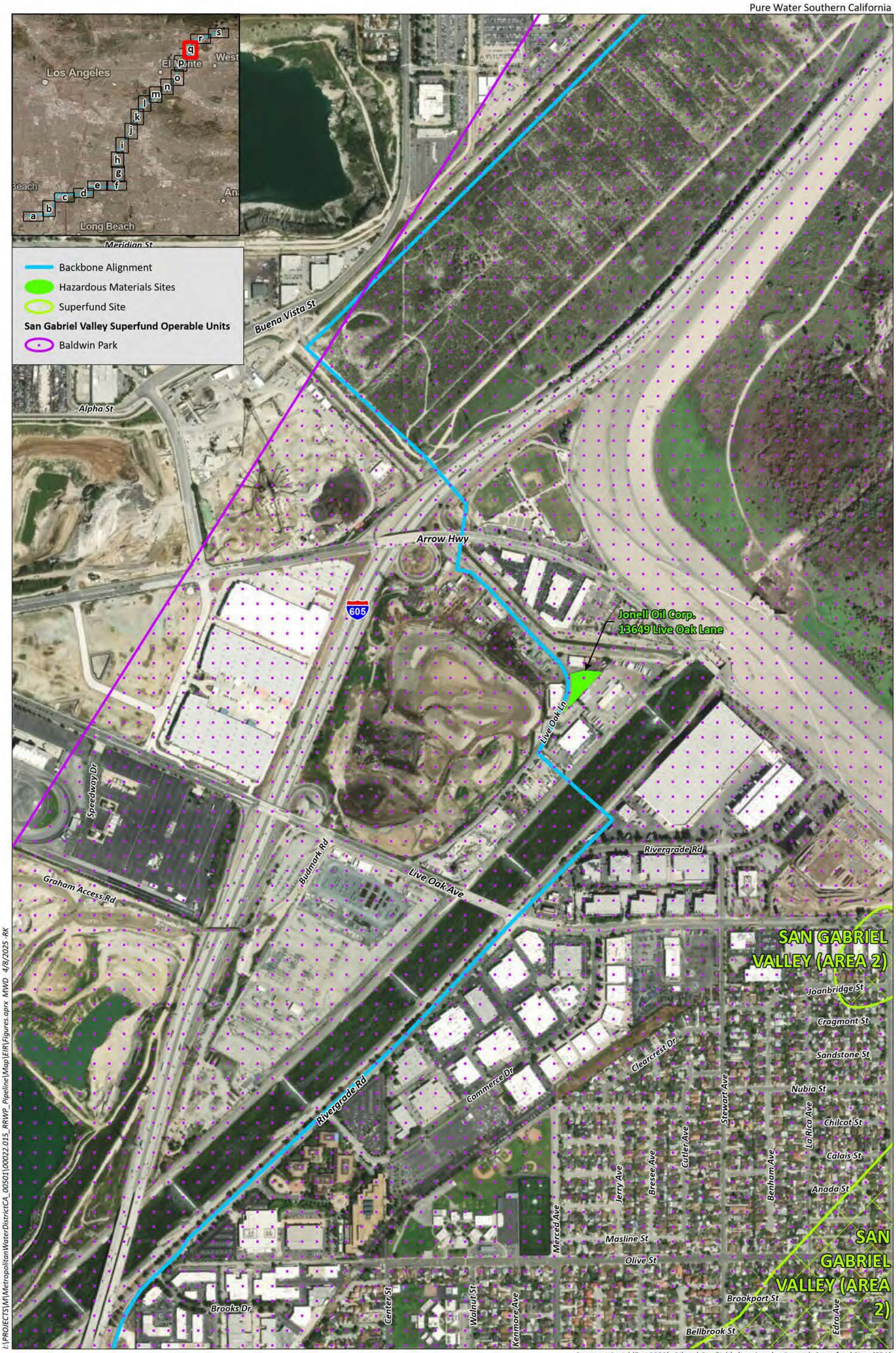
Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1p



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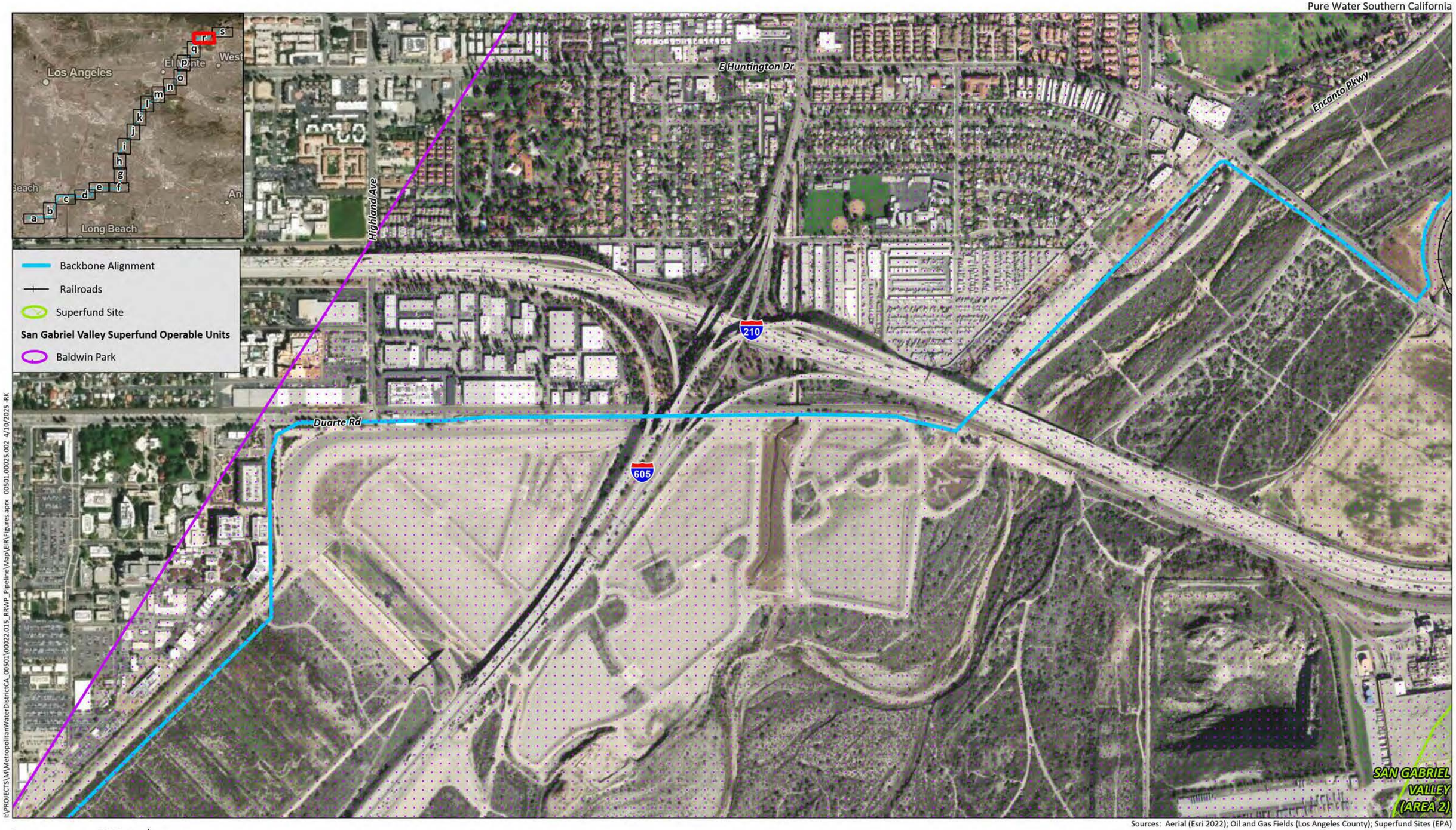
Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

0 700 Feet

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1q



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0 700 Feet

Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1r

Sources: Aerial (Esri 2022); Oil and Gas Fields (Los Angeles County); Superfund Sites (EPA)

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PUREWATER SOUTHERN CALIFORNIA

Hazardous Materials Sites

Figure 5.7-1s

Table 5.7-1
RECOGNIZED ENVIRONMENTAL CONDITIONS AT SPECIFIC PROPERTIES

Property	Address	Relationship to Pure Water	Property Operations/Reason for Concern	Risk Class	REC Classification
Fletcher Oil Refining Company (FORCO)	24721 South Main Street	Contains majority of AWP Facility site (**Figure 5.7-1a**)	Former oil refinery: TPH affecting soil and groundwater; listed on the SLIC database; top 30 feet of soil has been remediated and received No Further Action/Closure determination from the Los Angeles Regional Board with a recorded Deed Restriction restricting site use to commercial/industrial; groundwater and soil deeper than 30 feet bgs still undergoing remediation.	Moderate	CREC
Warren Facility Buffer Property Leased to International Plant Growers Inc	321 West Sepulveda Boulevard	Contains Workforce Training Center site (**Figure 5.7-1a**)	Plant nursery: use of pesticides, herbicides, and fungicides throughout the site for horticulture operations; diesel ASTs: evidence of leaks and staining on cracked pavement in the vicinity of the ASTs; hydraulic driven conveyor: evidence of leaks and staining on cracked pavement in the vicinity of the conveyor; degraded, cracked, and heavily stained pavement throughout the site where horticulture operations occur.	Moderate	REC
United Oil #61	320 East Sepulveda Boulevard	Adjacent to backbone alignment (**Figure 5.7-1a**)	Fuel storage: unauthorized release of TPH affecting soil and groundwater; listed on the LUST database, USTs.	High	REC
Thrifty #073	23900 South Avalon Boulevard	Adjacent to backbone alignment (**Figure 5.7-1a**)	Fuel storage: unauthorized release of TPH affecting soil and groundwater; listed on the LUST database, USTs.	High	REC
Montrose Chemical Corp.	20201 South Normandie Avenue	Overlaps backbone alignment (**Figure 5.7-1b**)	Superfund site: Unauthorized release of DDT, chlorobenzene, and pCBSA affecting soil, groundwater, and drainage channels including Dominguez Channel; listed on the NPL database.	High	REC
ACTA Parcels PCH-1552, 1553, 1554	East Alameda Street	Overlaps backbone alignment (**Figure 5.7-1b**)	O Street connector between Alameda Street and Pacific Coast Highway: unauthorized release of VOCs, primarily 1,3,5-trimethylbenzene affecting soil; listed on the SLIC database.	Moderate	REC

Property	Address	Relationship to Pure Water	Property Operations/Reason for Concern	Risk Class	REC Classification
ACTA South – Parcel SE-349	South Alameda Street	Overlaps backbone alignment (**Figure 5.7-1b**)	Railroad ROW: unauthorized release of TPH affecting soil; listed on the SLIC database	Moderate	REC
Mobil #18-MPL (Former #11-MPL)	2626 Del Amo Boulevard	Adjacent to backbone alignment (**Figure 5.7-1d**)	Fuel storage: unauthorized release of TPH affecting soil and groundwater; listed on the LUST database, USTs.	High	REC
George Adamian Property	2709 South Street	Adjacent to backbone alignment (**Figure 5.7-1e**)	Listed on the LUST database as "Open – Site Assessment" for the release of TPHs onto soil and groundwater.	High	REC
United Oil #73	3495 South Street	Adjacent to backbone alignment (**Figure 5.7-1e**)	Listed on the LUST database as "Open – Site Assessment" for the release of TPHs onto soil and groundwater.	High	REC
ARCO Terminal Services Corp. / Arco East Hynes Terminal	5905 Paramount Boulevard	Approximately 650 feet north of backbone alignment (**Figure 5.7-1e**)	Listed on the LUST and SLIC databases as "Open – Site Assessment" for the release of TPH onto soil and groundwater.	High	REC
EEL Holdings, LLC	3265 59th Street E	Approximately 1,000 feet north of backbone alignment (**Figure 5.7-1e**)	Listed on the LUST database as "Open – Site Assessment" for the release of TPHg and 1,2-DCA onto soil and groundwater.	High	REC
Mobil #18-MNK	4311 South Street	Adjacent to backbone alignment (**Figure 5.7-1e**)	Listed on the LUST database as "Open – Site Assessment" for the release of TPHs onto soil and groundwater.	High	REC
San Gabriel Valley (Area 2)	Sunset & San Bernardino Freeway	Overlaps backbone alignment (**Figures 5.7-1n, o, p**)	Superfund site: Baldwin Park Operable Unit of San Gabriel Valley (Area 2) with unauthorized release of VOCs affecting soil and groundwater; listed on the NPL database.	High	REC
San Gabriel Valley	Los Angeles County	Overlaps backbone alignment	VOCs concentrations above MCLs.	High	REC
Jonell Oil Corp.	13649 Live Oak Lane	Adjacent to backbone alignment (**Figure 5.7-1q**)	Listed on the NPL database as having a status of "part of the NPL site".	High	REC

Notes: **1,2-DCA**= 1,2-dichloroethane; **ACTA** = Alameda Corridor Transportation Authority; **ASTs** = Aboveground Storage Tanks; **bgs** = below ground surface; **CREC** = controlled recognized environmental condition; **DDT** = Dichlorodiphenyltrichloroethane; **HMI** = Hazardous Material Impact; **LUST** = Leaking Underground Storage Tank; **MCL** = Maximum Contaminant Level; **NPL** = National Priority List; **pCBSA** = paradichlorobenzene sulfonic acid; **REC**= recognized environmental condition; **SLIC** = Spills, Leaks, Investigations, and Cleanups Program; **SVE** = soil vapor extraction; **TPH** = total petroleum hydrocarbons; **TPHg** = total petroleum hydrocarbons as gasoline; **USTs** = Underground Storage Tanks; **VOC** = volatile organic compound.

In addition to the RECs at specific properties included above in **Table 5.7-1**, other RECs that are in the hazardous materials study area but are not associated with a specific property/site include the following:

- The Torrance, Wilmington, Dominguez, Santa Fe Springs, and Lapworth Oil Fields, whose administrative (i.e., legally documented) boundaries overlap with the Joint Treatment Site and backbone alignment (**Figures 5.7-1a, 5.7-1c, 5.7-1j,** and **5.7-1m)**. This is considered an REC due to the potential presence of underground methane.

- Several active hazardous liquid pipelines containing crude oil or non-highly volatile liquids product and gas transmission lines that are located traversing or adjoining the Joint Treatment Site and backbone alignment. The presence of these hazardous liquid pipelines and gas transmission lines is considered an REC.

- Aboveground storage tanks containing petroleum products within a refinery located along the southern portion of the backbone alignment. Evidence of leaks or staining was not observed during site reconnaissance. The presence of these aboveground storage tanks is considered a potential REC.

- Various railroad ROWs adjoining or traversing the Joint Treatment Site and backbone alignment. Equipment and materials often historically used in association with railroads, such as lead, ballast materials containing steel slag with potential regulated heavy metal concentrations, total petroleum hydrocarbon fuel leaks, polychlorinated biphenyl (PCB) leaks, and railroad lubricators utilizing petroleum products, may have been used within these sites. The potential presence of residual chemicals from the railroad ROWs is considered an REC.

5.7.1.2 Airports

Airports within two miles of the Joint Treatment Site and backbone alignment include the Long Beach Airport and San Gabriel Valley Airport. The Long Beach Airport, located in the City of Long Beach, is located approximately 1.3 miles south of the backbone alignment and 6.5 miles east of the Joint Treatment Site. It is a commercial airport owned and operated by the City of Long Beach and has three runways, the longest measuring approximately 10,000 feet, and used by major passenger airlines and cargo services (City of Long Beach 2024). The Airport Influence Area (AIA) for Long Beach Airport, as mapped in the Los Angeles County Airport Land Use Plan, does not overlap with the backbone alignment or Joint Treatment Site (Los Angeles County Airport Land Use Commission 2004).

The San Gabriel Valley Airport, located in the City of El Monte, is approximately 1.9 miles west of the backbone alignment and 23.5 miles northeast of the Joint Treatment Site. It is a general aviation airport owned and operated by the County of Los Angeles and has a single runway with a length measuring approximately 4,000 feet. It accommodates a range of fixed-wing and rotary-wing general aviation aircraft ranging from small two-seat, single-engine propeller aircraft to much larger and higher capacity turbo-prop and jet aircraft (LACPW 2024). The AIA for San Gabriel Valley Airport, as mapped in the San Gabriel Valley Airport Layout Plan, does not overlap with the backbone alignment or Joint Treatment Site (AECOM 2015).

5.7.1.3 Emergency Response and Evacuation

Major hazards potentially requiring emergency response and evacuation in Los Angeles County include earthquakes and seismic hazards, wildfires, floods, tsunamis, debris flows and land movement, excessive heat, drought, dam failure, and climate change (County of Los Angeles 2023). The County of Los Angeles Operational Area Emergency Operations Plan (OAEOP) establishes the coordinated emergency management system within the Los Angeles County Operational Area (OA). The OAEOP provides guidance and procedures for Los Angeles County to prepare for, respond to, and recover from the effects of large-scale emergencies.

Evacuation routes are determined by emergency responders who decide at the time of the emergency the routes that should be used for evacuation after assessing the conditions and location of the emergency to avoid endangering the lives of others, personal injury, or death. Evaluating a route for safety and viability is situational, context-specific, and subject to change. That being said, major thoroughfares in the Pure Water area that could potentially serve as evacuation routes in the event of an emergency include interstates I-405, I-605, I-5, I-710, I-10, and I-210, as well as state routes SR 19, SR 42, SR 60, and SR 91.

5.7.1.4 Wildfire Hazards

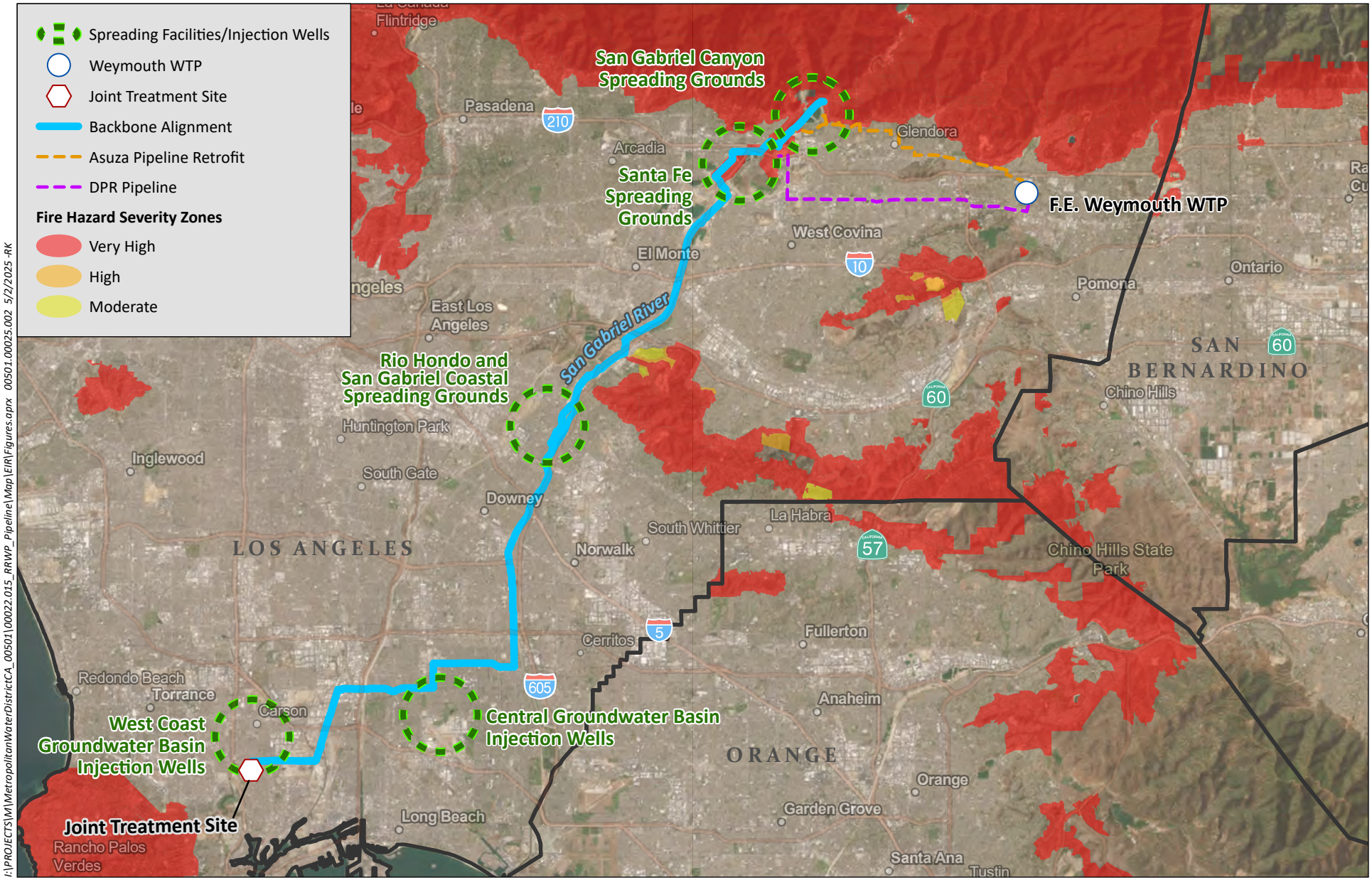
The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire hazard severity zones for Los Angeles County and identifies responsibility areas for fire protection, including Federal, State, and Local Responsibility Areas. Fire hazard severity zones are ranked as moderate, high, and very high and are determined with a model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior, such as fire history, existing and potential fuel (i.e., natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area (CAL FIRE 2024).

Within Los Angeles County, very high fire hazard severity zones (VHFHSZs) are generally associated with undeveloped mountainous areas that contain potentially flammable vegetation, including the Santa Monica Mountains, San Gabriel Mountains, and Puente Hills. VHFHSZs within the Pure Water area are located in the northern portion of the San Gabriel Mountains, generally north of I-210, and along the backbone alignment in the Santa Fe Dam Recreation Area and near the backbone alignment in the Whittier Narrows Recreation Area (**Figure 5.7-2**).

5.7.2 Regulatory Framework

Laws and regulations that govern the generation, use, storage, transportation, and disposal of hazardous materials and wastes are described in the following sections. Federal agencies that oversee and regulate activities involving hazardous materials and wastes include the USEPA and the federal Occupational Safety and Health Administration. Various state agencies also oversee and regulate such activities, including the California Department of Toxic Substances Control (DTSC), the California Division of Occupational Safety and Health, and the SWRCB.

On the regional level, the Environmental Health Division of the Los Angeles County Department of Public Health is responsible for the enforcement and education of federal, state, and local laws and regulations related to environmental factors that affect public health and safety. In addition, LACPW is a Unified Program Agency and a Participating Agency to the Los Angeles County Certified Unified Program Agency(CUPA), which is managed by the Los Angeles County Fire Department Health Hazardous Materials Division. The Los Angeles County CUPA has jurisdiction in all unincorporated and incorporated



Sources: Aerial (Esri 2022); Fire Hazard Severity Zones (CalFire 2023)

0 5 Miles

PURE WATER SOUTHERN CALIFORNIA

Fire Hazard Severity Zones

Figure 5.7-2

areas unless otherwise noted by a municipality. The CUPA is responsible for the Underground Storage Tank program in Los Angeles County pursuant to Ordinance No. 83-0206U; Los Angeles County Code, Title 11, Division 4; Health and Safety Code, Division 20, Chapter 6.7; and CCR, Title 23, Division 3, Chapter 16 and 18. Applicable regulations related to other hazards include wildfire standards, as described in Section 5.7.2.2.

5.7.2.1 Federal

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act (RCRA) is the federal law governing the ongoing generation and management of hazardous waste. Regulations under RCRA are codified in Title 40 of the CFR, parts 239 through 282, and provide a framework for "cradle to grave" handling of hazardous waste. Specifically, this requires entities to track their hazardous waste management from the point of generation to the point of recycling, reuse, or permanent disposal. The Federal Hazardous and Solid Waste Amendments of 1984 called for waste minimization and phasing out disposal of hazardous wastes to landfills, developed standards for underground storage tanks, and prescribed the process for corrective action following releases. The USEPA has the primary role of implementing RCRA, although individual states (including California, as outlined below) are also authorized to carry out provisions of the law.

Hazardous Materials Transportation Act of 1975

The U.S. Department of Transportation has the authority to regulate the transportation of hazardous materials under Title 49 of the CFR. Last amended in 2005, the Hazardous Materials Transportation Act provides minimum regulations for the transport of hazardous materials by air, land, rail, or water. The four key provisions of the law are the establishment of procedures and policies, rules for material designations and labeling, packaging requirements, and operational rules. In California, the California Highway Patrol and the California Department of Transportation (Caltrans) are the state agencies with primary responsibility for governing hazardous materials transportation permits, enforcing federal and state regulations, and responding to hazardous materials transportation emergencies.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, provides national guidelines for responding to releases or threatened releases of hazardous substances and maintains a trust fund to clean up known hazardous waste sites. Federal actions related to CERCLA are limited to sites on the National Priorities List (NPL) for cleanup activities, with NPL listings based on the USEPA Hazard Ranking System. The Hazard Ranking System is a numerical ranking system used to screen potential sites based on criteria such as the likelihood and nature of hazardous material release, and the potential to affect people or environmental resources. CERCLA was passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act made the following changes and additions to the Superfund program under CERCLA:

- The budget allotted to the trust fund for cleanup actions was increased.

- The Hazard Ranking System was revised to more accurately reflect risks that hazardous waste sites pose to human health and the environment.
- State involvement was increased, and changes were made to ensure consistency with other state and federal laws and regulations.
- There was a greater focus on permanent remedies and innovative treatment technologies.
- Citizen participation in the decision-making process was encouraged.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act was authorized by Title III of the Superfund Amendments and Reauthorization Act. The purpose of the Emergency Planning and Community Right-to-Know Act is to support emergency response preparedness and to provide the public with information regarding potential chemical hazards in their communities. The law directs emergency planning committees at the state and local level to develop emergency response plans for chemical releases. It also requires industry to provide information to federal, state, and local governments on the storage, use, and release of hazardous chemicals.

Oil Pollution Prevention Regulation

The Oil Pollution Prevention Regulation, originally published in 1973 under the authority of Section 311 of the CWA, sets forth requirements for the prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. The goal of this regulation is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. The regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes procedures, methods, and equipment requirements.

Underground Storage Tank Program

The Federal Underground Storage Tank Program was established when the Hazardous and Solid Waste Amendments to RCRA were approved on November 8, 1984. The U.S.C., Title 42, Chapter 82, Subchapter IX is the codified Federal Underground Storage Tank Law. The CFR further defines the underground storage tank requirements of RCRA. Most of the underground storage tank regulations can be found in 40 CFR Part 280 and 40 CFR Part 281. The Federal Underground Storage Tank Program is overseen by the USEPA's Office of Underground Storage Tanks. The SWRCB is the authorized state agency to regulate the Underground Storage Tank Program in California.

5.7.2.2 State

California Code of Regulations, Title 22

Most state regulations and requirements for hazardous waste are codified in CCR, Title 22, Division 4.5. Title 22 contains detailed compliance requirements for hazardous waste generation, transport, treatment, storage, and disposal facilities. California is a fully authorized state to implement RCRA; therefore, most RCRA regulations are integrated into Title 22. The DTSC regulates hazardous waste more stringently than the USEPA; therefore, Title 22 does not contain as many exemptions or exclusions as the equivalent federal regulations. Similar to the California Health and Safety Code (as outlined below),

Title 22 also regulates a wider range of waste types and waste management activities than RCRA. While California has compiled a number of additional regulations from various CCR titles related to hazardous materials, such as wastes and toxics in CCR Titles 26 (Toxics), 23 (Waters), and 27 (Environmental Protection), state hazardous waste regulations are still commonly referred to as Title 22.

California Health and Safety Code, Hazardous Materials Release Response Plan and Inventory

The DTSC has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Section 25531, *et seq*., incorporates the requirements of the Clean Air Act as they pertain to hazardous materials. Under the California Accidental Release Program, businesses that store more than a threshold quantity of a regulated substance in a process (as specified in CCR, Title 19 Section 5130.6) at their facilities are required to develop and submit a Risk Management Plan to the appropriate local authorities, the designated local administering agency, and the USEPA for review and approval. The Risk Management Plan is intended to satisfy federal "right-to-know" requirements and provide basic information to regulators and first responders, including identification/quantification of regulated substances used or stored on site, operational and safety mechanisms in place (including employee training), potential onsite and offsite consequences of a release, and emergency response provisions.

Under California Health and Safety Code, Division 20, Chapter 6.95, businesses handling or storing hazardous materials at or above 500 pounds, 55 gallons or 200 cubic feet are required to prepare a Hazardous Materials Business Plan (HMBP). The HMBPs must include an inventory of hazardous materials stored onsite (above specified quantities), an emergency response plan, and an employee training program. HMBPs are also required to include a written set of procedures and information created to help minimize the effects and extent of a release or threatened release of a hazardous material, and must be prepared prior to facility operation (with updates and amendments required for appropriate circumstances such as changes in business location, ownership, or operations).

Carpenter-Presley-Tanner Hazardous Substance Account Act

The Carpenter-Presley-Tanner Hazardous Substance Account Act, included in Division 45 of the California Health and Safety Code, establishes a program authorizing certain responses to releases of hazardous substances, including spills and hazardous waste disposal sites, which pose a threat to the public health or the environment, and imposes liability for hazardous substance removal or remedial actions.

Aboveground Petroleum Storage Act

The Aboveground Petroleum Storage Act regulates tank facilities that are subject to the federal SPCC regulation or tank facilities with an aggregate storage capacity of 1,320 gallons or more of petroleum in aboveground storage containers or tanks with a shell capacity equal to or greater than 55 gallons. APSA also regulates tank facilities with less than 1,320 gallons of petroleum if they have one or more stationary tanks in an underground area with a shell capacity of 55 gallons or more of petroleum, and, in this case, only the tanks in an underground area are subject to the Aboveground Petroleum Storage Act, although there are exceptions. Effective January 1, 2013, CAL FIRE is responsible for ensuring implementation of the Aboveground Petroleum Storage Act program.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Pursuant to California Health and Safety Code, Division 20, Chapter 6.11, the California Environmental Protection Agency (CalEPA) established the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which consolidated six existing state programs related to hazards and hazardous materials. The six programs consolidated under the Unified Program are: Aboveground Petroleum Storage Act Program, California Accidental Release Program, HMBP, Hazardous Materials Management and Inventory Program, Hazardous Waste and Hazardous Waste Treatment Program, and Underground Storage Tank Program. The Unified Program also allows the designation of CUPAs to implement associated state regulations within their jurisdiction.

Fire Hazard Severity Zones

Legislative mandates passed in 1981 (SB 81) and 1982 (SB 1916) require CAL FIRE to develop and implement a system to rank fire hazards in California. As discussed above in Section 5.7.1.4, areas are rated as moderate, high, or very high, based primarily on the assessment of potential fuels and terrain. CAL FIRE also identifies responsibility areas for fire protection, including Federal, State, and Local Responsibility Areas. The fire hazard severity rankings and associated mapping are used for implementing wildland urban building standards for new construction; determining defensible space clearance requirements around buildings; disclosing natural hazard real estate at time of sale; and establishing property development standards such as road widths, water supply, and signage.

5.7.2.3 Regional

County of Los Angeles Operational Area Emergency Operations Plan

As mentioned above in Section 5.7.1.3, the County of Los Angeles OAEOP establishes the coordinated emergency management system within the Los Angeles County OA, which encompasses the County and all political subdivisions within the geographical boundaries of the County. The OAEOP provides guidance and procedures for the County to prepare for, respond to, and recover from the effects of large-scale emergencies. The OAEOP focuses on the operational concepts related to all-hazards emergency response and recovery, including maintaining the County's continued compliance with the National Response Framework, National Incident Management System, National Disaster Recovery Framework, California Standardized Emergency Management System, principles of the Incident Command System, and the National Preparedness Goal. It facilitates multiagency and multijurisdictional coordination during emergency operations, public information functions, resource management, and recovery efforts.

5.7.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to hazards and hazardous materials. Pure Water would have a significant impact if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

2. 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;

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment;

5. 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, the project would result in a safety hazard or excessive noise for people residing or working in the project area;

6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

5.7.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

HAZ-EC-1 **Hazardous Materials Business Plan and Spill Prevention, Control, and Countermeasure Plan.** Metropolitan shall prepare a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of California Health and Safety Code, Division 20, Chapter 6.95 for operation of facilities that use and store potentially hazardous chemicals. The HMBP shall include an inventory of hazardous materials stored onsite, storage and containment methods, an emergency response plan, and an employee training program. The HMBP shall be submitted to the appropriate unified program agency for review and approval, as applicable. In addition, a Spill Prevention, Control, and Countermeasure (SPCC) Plan shall be required if any sites will store more than a total of 1,320 gallons of petroleum in aboveground containers or in containers having a storage capacity of at least 55 gallons, in accordance with the requirements of the Aboveground Petroleum Storage Act.

HAZ-EC-2 **Site-Specific Safety Plan.** Metropolitan or its contractors shall prepare a Site-Specific Safety Plan (SSSP) addressing the potential for discovery of unidentified underground storage tanks, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction and demolition activities. The SSSP shall also address underground storage tank decommissioning, field screening and materials testing methods, contaminant management requirements, and health and safety requirements in compliance with applicable U.S. Environmental Protection Agency (USEPA), Los Angeles Regional Water Quality Control Board (Los Angeles Regional

Board), Department of Toxic Substances Control (DTSC), and local guidelines. The SSSP shall be prepared prior to the start of work and shall be implemented during all construction activities. All hazardous or solid wastes and debris encountered or generated during construction and demolition activities shall be handled in accordance with the SSSP all applicable federal, state, and local laws and regulations.

HAZ-EC-3 **Hazardous Materials Management Plan.** The SSSP described in HAZ-EC-2 shall include a Hazardous Materials Management Plan for appropriate handling of potentially contaminated soil to be implemented during all phases of construction. Workers shall be trained to identify and recognize potentially hazardous materials (e.g., visual evidence of staining or discoloration). If hazardous materials are found or an unknown material is encountered that could potentially be hazardous, the Contractor shall stop work on the area immediately and notify appropriate safety representatives. Furthermore, excavated soil within the vicinity of properties identified as Recognized Environmental Conditions and Controlled Recognized Environmental Condition in this report shall be monitored (i.e., utilizing a four-gas meter)in accordance with South Coast Air Quality Management District (SCAQMD) Rules 1166 and 1466 related to soils contaminated with volatile organic compounds or toxic contaminants, and for explosiveness and other gases typically monitored during excavations.

If the monitoring procedures indicate that soil is potentially contaminated, the SSSP shall be implemented and shall include procedures for segregation, sampling, and chemical analysis of the soil. These procedures shall follow USEPA and DTSC regulations for handling contaminated soil as well as the Los Angeles Regional Board-approved Soil Management Plan for the former Fletcher Oil and Refining Company site within the Joint Treatment Site. As required by regulations in place at the time of construction, contaminated soil shall be profiled for disposal and shall be transported to an appropriate hazardous or non-hazardous waste or recycling facility licensed to accept and treat the type of waste indicated by the profiling process. If these processes generate contaminated groundwater that must be disposed of outside of the dewatering/National Pollutant Discharge Elimination System process, the groundwater shall be profiled, manifested, hauled, and disposed of in accordance with USEPA and Los Angeles Regional Board regulations in place at the time of construction.

HAZ-EC-4 **Utility Location Survey.** A survey shall be conducted during design of the proposed facilities to identify the location of other pipelines, utilities, and other infrastructure that may be encountered during construction. The location of such facilities shall be shown on the design plans to facilitate coordination with owners and/or avoidance during construction. In addition, a subsurface geophysical survey shall be conducted prior to excavation activities to confirm the location of existing pipelines, utilities, and other infrastructure or the absence of these facilities.

HAZ-EC-5 **Demolition Evaluations.** Prior to construction activities, Metropolitan or its contractors shall conduct an evaluation of the structures to be demolished to evaluate the presence of asbestos-containing materials, lead-based paint, and/or polychlorinated biphenyls-containing materials in accordance with applicable USEPA and SCAQMD rules and regulations. Remediation shall be implemented in accordance with all applicable federal, state, and local laws and regulations.

TRA-EC-1 **Traffic Control Plan/Traffic Management Plan.** Metropolitan or its contractors shall prepare and implement a Traffic Control Plan and/or a Traffic Management Plan for each component of Pure Water constructed within public right-of-way to manage traffic flow during construction, reduce potential interference with local emergency response plans, reduce potential traffic safety hazards, and ensure adequate access for emergency responders as required by the local jurisdiction. Development and implementation of these plans shall be coordinated with local agencies with jurisdiction over affected roadways.

Traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours as feasible, installing warning and detour signs (as needed), drafting lane closure procedures, and placing traffic cones to guide drivers indicating potential road hazards or detours (as needed) shall be implemented. Other potential traffic control measures include the provision of safe detour routes for pedestrians if sidewalks are to be closed and temporary changes to traffic signal phases and timings, if needed.

Metropolitan shall provide oversight of the construction contractor(s) to ensure that these plans are implemented during construction. Traffic control measures shall be consistent with the California Manual of Uniform Traffic Control Devices and the Work Area Traffic Control Handbook.

In addition, Metropolitan shall coordinate with local police and fire departments to ensure their awareness of construction activities and provide detour routes for emergency vehicles and to develop a process for responding to and tracking issues pertaining to construction activity.

5.7.5 Impact Analysis

5.7.5.1 Topic 1: Transport, Use, Disposal, or Accidental Release of Hazardous Materials

Would Pure Water create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Would Pure Water 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?

Would Pure Water emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Program-Level Analysis

Construction

Construction activities associated with Pure Water facilities and components would require the use of typical hazardous materials including, but not limited to, petroleum products (e.g., oil, gasoline, and diesel fuels), automotive fluids (e.g., antifreeze and hydraulic fluids), and other chemicals

(e.g., adhesives, solvents, paints, and thinners). None of these is considered acutely hazardous. Some construction activities would occur within a quarter mile from a school. Metropolitan and its contractors would comply with applicable federal, state, and local regulations pertaining to hazardous materials use, handling, storage, and disposal. As such, impacts related to the use of hazardous materials and associated foreseeable upset and accident conditions during construction would be **less than significant**. The transport and disposal of hazardous materials associated with the removal of contaminated soil or groundwater during construction is addressed below under Topic 2 in Section 5.7.5.2.

Operation

The use of hazardous materials during operation of Pure Water would primarily be associated with chemicals for advanced water purification processes, chlorine at the pump stations, and typical operations and maintenance equipment-related materials, such as petroleum products and automotive fluids. Some operational activities would occur within a quarter mile from a school. Such chemicals would be properly handled, transported, stored, and disposed of in compliance with applicable regulations. Specifically, in accordance with **HAZ-EC-1**, Metropolitan would prepare and implement a HMBP and SPCC, as applicable. As such, impacts related to the use of hazardous materials, including associated foreseeable upset and accident conditions, during operation of Pure Water would be **less than significant**. Impacts specific to the operation of the AWP Facility are discussed in further detail below under *Project-Level Analysis.*

Project-Level Analysis

Construction

Similar to what is discussed above under *Program-Level Analysis*, construction of the project-level facilities and components would require the use of typical hazardous materials, such as petroleum products, automotive fluids, and other chemicals, none of which is considered acutely hazardous. Use of these materials would occur within a quarter mile from a school and other sensitive receptors. Metropolitan and its construction contractors would comply with applicable federal, state, and local regulations pertaining to hazardous materials use, handling, storage, transportation, and disposal. As such, impacts related to the use of hazardous materials and associated foreseeable upset and accident conditions during construction would be **less than significant**.

Operation

Chemicals would be required at the AWP Facility for the treatment process and for cleaning membranes. Such chemicals would include phosphoric acid, supplemental carbon, sodium hypochlorite, liquid ammonium sulfate, anti-scalant, and caustic, citric, phosphoric, and sulfuric acids. The AWP Facility is designed for 14 days of storage for these chemicals, except for supplemental carbon, where a 7-day storage is planned due to space limitations. Chemicals would be stored in three separate storage facilities located at different areas of the site: one for supplemental carbon; one for sodium hypochlorite; and one for the other chemicals. Each chemical storage facility would be located under a canopy for weather protection. The bulk chemical storage tanks at the chemical storage facilities would be installed on concrete slabs at grade with secondary containment for each chemical sized to contain the largest volume of one tank. Additional hazardous materials that would be present at the AWP Facility include petroleum products associated with the backup generators. In accordance with **HAZ-EC-1**, Metropolitan would prepare a HMBP and SPCC Plan for the site, which would include an inventory of hazardous materials stored on site (above specified quantities), an emergency response

plan, and an employee training program. If spills occur, the chemicals would be collected and disposed of offsite in accordance with measures and actions set forth in the HMBP and SPCC Plan.

The proper handling, transportation, storage, and disposal of chemicals in compliance with regulations, including implementation of **HAZ-EC-1**, would avoid potentially significant impacts related to the use of hazardous materials at the site, including avoiding potentially significant impacts to Wilmington Middle School, which is located within a quarter mile of the AWP Facility (approximately 0.1 mile to the southeast across both Main Street and Lomita Boulevard). Therefore, with compliance with applicable regulations and implementation of **HAZ-EC-1**, impacts associated with use of hazardous materials, including associated foreseeable upset and accident conditions, during operation of the AWP Facility would be **less than significant**.

Operation of the backbone pipeline may involve the use of hazardous materials during inspections, maintenance, and repairs. Hazardous materials could include diesel fuel for utility trucks, generators, and welding equipment; dechlorination chemicals to remove chlorine from water that would be discharged into storm drains, channels, or streams to facilitate the inspections, maintenance and repairs; and coating, lining, and welding materials for pipeline repair. The proper handling, transportation, storage, and disposal of these materials in compliance with regulations would avoid potentially significant impacts related to the use of hazardous materials. Therefore, with compliance with applicable regulations and implementation of **HAZ-EC-1**, as applicable, impacts associated with use of hazardous materials, including associated foreseeable upset and accident conditions, during operation of the backbone pipeline would be **less than significant**.

5.7.5.2 Topic 2: Hazardous Materials Sites

Would Pure Water be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Program-Level Analysis

The Pure Water area is highly developed and urbanized and includes commercial facilities, light industrial facilities, manufacturing facilities, and refineries. Such uses often involve the use and/or production of hazardous materials, potentially resulting in hazardous materials sites and/or RECs. Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance and/or demolition of existing structures, have the potential to encounter hazardous materials at such sites. Potential impacts associated with the project-level facilities and components, for which the specific locations are known, are discussed below under *Project-Level Analysis.* Because the exact locations of other Pure Water facilities and components are unknown at this stage of program design, there is potential for these facilities and components to be sited within or adjacent to hazardous materials sites or RECs, which could create a hazard to the public or the environment. Once the specific locations of these Pure Water facilities and components are determined, known or potential hazardous materials in and adjacent to those locations will be identified.

Pure Water would implement **HAZ-EC-2**, **HAZ-EC-3**, **HAZ-EC-4**, and **HAZ-EC-5** to address potential hazardous materials that may be encountered. **HAZ-EC-2** would involve the preparation of an SSSP to address the potential for discovery of unidentified underground storage tanks, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction and demolition

activities. **HAZ-EC-3** would involve an HMBP for appropriate handling of potentially contaminated soil to be implemented during construction. In accordance with **HAZ-EC-4**, a detailed utility location survey would be conducted to identify and avoid existing utilities. In accordance with **HAZ-EC-5**, structures that are planned for demolition would be evaluated for the presence of asbestos-containing materials, lead-based paint, and PCB-containing materials, and remediation would be implemented, as necessary, in accordance with the evaluations and applicable regulations. The SSSP and HMBP required by **HAZ-EC-2** and **HAZ-EC-3** would be tailored to specifically address applicable hazardous materials.

Facilities located within or adjacent to hazardous materials sites or RECs would be operated in compliance with applicable regulations and any hazardous materials covenants or restrictions placed on specific sites to minimize exposure of a hazard to the public or environment.

Through implementation of the identified environmental commitments, as well as compliance with federal, state, and local regulations, impacts associated with construction and operation of Pure Water would be **less than significant**.

Project-Level Analysis

Construction

Several RECs and a CREC were identified as part of the Hazardous Materials Assessment (Ninyo & Moore 2024) as overlapping with the Joint Treatment Site and/or backbone alignment. These RECs and CREC are provided in **Table 5.7-1** and shown on **Figure 5.7-1a** through **5.7-1s**. Although vacant now, the location of the proposed AWP Facility was formerly an oil refinery owned by Fletcher Oil and Refining Company (FORCO), which ceased operations in 1992. The Sanitation Districts acquired the property in 2000 and, in 2007, assumed responsibility for remediation of the soil and groundwater at the site, which has been ongoing since 2004 and was necessary due to impacts from petroleum products. Based on the progress of site remediation, the Los Angeles Regional Board issued a No Further Action/Closure determination for a commercial/industrial soil closure for the top 30 feet of soil at the former FORCO site on December 23, 2021. The "Covenant and Environmental Restriction on Property: Former Fletcher Oil and Refining Company (FORCO) Site; Assessor's Parcel Numbers: 7406-026-916, -917, and -918; 24721 S. Main Street, Carson, California 90745; LARWQCB Site Cleanup Program No. 0451A; Site ID No. 2040074" was executed and recorded by the Sanitation Districts to limit use of the site to commercial/industrial applications, such as Pure Water. On June 21, 2023, the Los Angeles Regional Board approved the Remedial Design and Implementation Plan, which describes the steps that will be taken to complete remediation of deep soil (greater than 30 feet) and groundwater. The Sanitation Districts continue to implement prescribed remediation activities for deep soil and groundwater. These remedial activities are expected to continue through the construction and operation of the AWP Facility. Site development activities would be coordinated to protect remediation infrastructure, to the extent possible. If existing remediation infrastructure needs to be relocated or if additional remediation infrastructure needs to be constructed at the site in the future, the Sanitation Districts and Metropolitan would work cooperatively to obtain Los Angeles Regional Board approval.

The backbone alignment crosses several sites/properties associated with petroleum aboveground storage tanks, underground storage tanks, and/or known and identified leaking underground storage tanks; a former dichlorodiphenyltrichloroethane (DDT) manufacturer; auto storage and repair, lumber storage, and metal scrapping and coating uses; railroad ROW; a contaminated groundwater plume; and a plant nursery with pesticides, herbicides, fungicides, and growth regulators used throughout the site, diesel aboveground storage tanks, and a hydraulic driven conveyor with evidence of leaks and staining.

Other areas of concern that are not identified as specific sites/properties in **Table 5.7-1** but within the hazardous materials study area include oil fields; active hazardous liquid pipelines containing petroleum products; additional petroleum aboveground storage tanks; and additional railroad ROW.

The known and identified petroleum aboveground storage tanks, underground storage tanks, and leaking underground storage tanks are associated with releases of petroleum hydrocarbons affecting soil, soil gas, and groundwater. The former DDT manufacturer site is associated with the unauthorized release of DDT, chlorobenzene, and paradichlorobenzene sulfonic acid affecting soil, groundwater, and drainage channels, including the Dominguez Channel, which crosses the backbone alignment. An operable unit[1] associated with the site consists of the study of facility-related contamination in the Kenwood Drain, Torrance Lateral, Dominguez Channel, and the Consolidated Slip with the Port of Los Angeles. These drainages are located where rainfall runoff may have carried contaminants from the former DDT manufacturer facility site. The operable unit is in the remedial investigation stage, and the USEPA has not selected a remedy for this operable unit. Railroad ROWs can involve unauthorized releases of VOCs, total petroleum hydrocarbons, and PCBs, as well as equipment and materials often historically used in association with railroads, such as lead, ballast materials containing steel slag with potential regulated heavy metal concentrations, and railroad lubricators utilizing petroleum products. A contaminated groundwater plume is associated with the Baldwin Park Operable Unit, which is an approximately 7.5-mile long and 1.5-mile wide area of groundwater beneath portions of the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente, and Industry that is impacted primarily by tetrachloroethylene (PCE), trichloroethylene (TCE), carbon tetrachloride, perchlorate, 1,4-dioxane, N--nitroso-dimethylamine, and 1,2,3-trichloropropane. The Baldwin Park Operable Unit is one of four Superfund sites cleaning up multiple areas of groundwater contamination in the San Gabriel Basin. While environmental investigations and remediation activities are ongoing or are planned at a number of the sites described above, based on their current status, they are considered RECs.

Construction activities for the Joint Treatment Site and backbone pipeline requiring soil disturbance could result in the exposure of construction workers, the public, and/or the environment to contaminated soil or soil gas located at the sites/properties discussed above. In addition, construction activities could encounter previously unidentified underground storage tanks, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes, and could result in the exposure of the construction workers, the public, and/or the environment to hazardous materials. For construction at the Joint Treatment Site, this would primarily be associated with initial site preparation activities at the AWP Facility site, which would include mass excavation and the removal of potentially contaminated soils. Excavation within the upper 30 feet of soil would comply with the requirements of the approved Soil Management Plan for FORCO (Advisian 2019). If construction plans change such that grading or depths of excavation exceed 30 feet, the conclusions of the Human Health Risk Assessment (HRA) and Soil Management Plan may need to be revisited. For construction of the backbone pipeline, soil disturbance would primarily be associated with trenching for pipe installation, excavating tunnel launching and receiving portals, and tunneling activities, including the handling, stockpiling, and backfilling or disposing (including associated transportation) of excavated material. **HAZ-EC-2** would involve the preparation of an SSSP to address the potential for discovery of unidentified underground storage tanks, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction and demolition activities. **HAZ-EC-3** would involve a Hazardous Materials

[1] During cleanup, a site can be divided into a number of distinct areas depending on the complexity of the problems associated with the site. These areas, called operable units, may address geographic areas of a site, specific site problems, or areas where a specific action is required.

Management Plan for appropriate handling of potentially contaminated soil to be implemented during construction. Hazardous or solid wastes and debris encountered or generated during construction and demolition activities would be handled and disposed of in accordance with applicable federal, state, and local laws and regulations.

Ground-disturbing construction activities would also have the potential to encounter existing underground pipelines containing hazardous liquids or other substances. In addition, demolition of aboveground structures and underground utilities would have the potential to result in the exposure of the construction workers, the public, and/or the environment to asbestos-containing materials, lead-based paint, and/or PCB-containing materials. In accordance with **HAZ-EC-4**, a detailed utility location survey would be conducted to identify and avoid existing utilities. In accordance with **HAZ-EC-5**, structures that are planned for demolition would be evaluated for the presence of asbestos-containing materials, lead-based paint, and PCB-containing materials, and remediation would be implemented, as necessary, in accordance with the evaluations and applicable regulations.

Through implementation of **HAZ-EC-2**, **HAZ-EC-3**, **HAZ-EC-4**, and **HAZ-EC-5**, as well as through compliance with applicable federal, state, and local regulations, impacts during construction would be **less than significant**.

Operation

Once constructed, the project-level facilities and components would not involve regular ground-disturbing operational activities in areas with potential hazardous materials that would create a significant hazard to the public or the environment. Use of the site for the proposed AWP Facility (including treatment facilities, warehouses, offices, etc., as detailed in Section 4.2.1) would be consistent with the uses permissible under the Covenant and Environmental Restriction on Property. Existing contaminated soil at the AWP Facility site would be removed, and the site paved, hardscaped, or landscaped, such that operational site workers and visitors would not be exposed to risk from the existing onsite hazardous materials. As such, operational impacts would **be less than significant**.

5.7.5.3 Topic 3: Airport Hazards

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 Pure Water result in a safety hazard or excessive noise for people residing or working in the Pure Water area?

Program-Level Analysis

As discussed above in Section 5.7.1.2, airports in the Pure Water area that are within two miles of proposed Pure Water facilities and components include the Long Beach Airport and the San Gabriel Valley Airport. Both airports are within two miles of the backbone pipeline and discussed below under *Project-Level Analysis.* No other airports are in the Pure Water area that could result in aircraft-related hazards. Therefore, overall impacts associated with airport hazards would be **less than significant**.

Project-Level Analysis

The backbone alignment is located approximately 1.3 miles from the Long Beach Airport and approximately 1.9 miles from the San Gabriel Valley Airport. The Joint Treatment Site is not located within an airport land use plan or within two miles of an airport (the nearest airport is Long Beach

Airport, located approximately 6.4 miles to the east). While the backbone alignment is within two miles of both airports, it is not within the AIA of either airport, as identified in the Los Angeles County Airport Land Use Plan and San Gabriel Valley Airport Layout Plan. The AIAs contain areas with safety restrictions and areas of excessive noise. Because the backbone alignment is not within the AIA of either airport, it is not located in an area that would be subject to safety hazards or excessive noise associated with either airport. In addition, the presence of Pure Water-related personnel along the backbone alignment would be limited to the temporary construction period and occasional maintenance/patrol activities during operations. Further, the backbone pipeline would be located underground and would not have the potential to obstruct aircraft flight through structure height or affect aircraft flight through electrical or visual (e.g., glare) hazards or attract wildlife that could be hazardous to aircraft operations. As such, implementation of the project-level facilities and components would not result in a safety hazard or excessive noise for people residing or working in the area. Therefore, impacts would be **less than significant**.

5.7.5.4 Topic 4: Emergency Response and Evacuation

Would Pure Water impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Program-Level Analysis

The primary emergency response and evacuation plan in the Pure Water area is the Los Angeles County OAEOP, which, as discussed above in Section 5.7.1.3, establishes the regional coordinated emergency management system within the Los Angeles County OA. The OAEOP provides guidance and procedures for Los Angeles County to prepare for, respond to, and recover from the effects of large-scale emergencies. This includes emergency response and evacuation. Primary response and evacuation routes are determined by emergency responders who decide at the time of the emergency the routes that should be used for response and evacuation after assessing the conditions and location of the emergency to avoid endangering the lives of others, personal injury, or death. Evaluating a route for safety and viability is situational, context-specific, and subject to change. That being said, major thoroughfares in the Pure Water area that would likely serve as evacuation routes in the event of an emergency include interstates I-405, I-605, I-5, I-710, I-10, and I-210, as well as state routes SR 19, SR 42, SR 60, and SR 91. Construction for Pure Water would not occur within or affect roadway conditions along these major routes, and would therefore not substantially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

At a local level, construction of the Pure Water facilities and components could have the potential to affect emergency response and evacuation from the generation of construction vehicles on local roadways and from construction within local roadways, which would occur for construction of the backbone pipeline, modifications to the Azusa Pipeline, and/or construction of the DPR Pipeline. The addition of construction vehicles on local roadways could result in increased congestion and delays for emergency response and evacuation. Construction within roadways would require temporary lane closures, street closures, and/or intersection closures, which could potentially cause lengthier detours and/or traffic congestion that could interfere with emergency response and evacuation. **TRA-EC-1**, which involves implementation of a TMP (see Section 5.11, *Transportation*), would be included as part of Pure Water to provide traffic control at the access points to construction sites and would facilitate management actions that would allow site access for emergency vehicles. The TMP would identify procedures for informing and coordinating with relevant police and fire departments on construction

locations and would identify potential detour routes. For local jurisdictions that operate Traffic Management Centers, these Traffic Management Centers would also be part of the coordination since they could help emergency access by identifying incidents and adjusting signal timing settings in real time. The TMP would also consider enabling emergency vehicles to travel behind temporary concrete barriers through the work area to access incidents located in a work zone. Through implementation of **TRA-EC-1**, construction of Pure Water would not impair or interfere with adopted emergency response or evacuation plans, and impacts would be **less than significant**.

Permanent long-term operation of the Pure Water facilities and components would not result in inadequate emergency access since regular daily operations would not require traffic detours, lane closures, street closures, or intersection closures, and would not generate high levels of vehicle traffic that would cause congestion. As such, long-term operational impacts would not impair or interfere with adopted emergency response or evacuation plans, and impacts would be **less than significant**.

Project-Level Analysis

Construction at the Joint Treatment Site and the backbone pipeline would have the potential to affect local emergency response and evacuation from the generation of construction vehicles on local roadways and from construction within local roadways. Specifically, access may be affected along Sepulveda Boulevard, Main Street, and Lomita Boulevard in the City of Carson during construction of facilities at the Joint Treatment Site. The backbone pipeline would be constructed within Main Street, Sepulveda Boulevard, Alameda Street, Del Amo Boulevard, Paramount Boulevard, South Street, and Palo Verde Avenue primarily using trenching methods, which would require lane, street, and/or intersection closures. Trenchless/tunneling methods would be used where applicable, to avoid major intersections and cross streets, including freeways. As discussed above under *Program-Level Analysis,* **TRA-EC-1**, would be included as part of Pure Water to allow for continued adequate emergency response and evacuation during construction of facilities at the Joint Treatment Site and construction of the backbone pipeline. Through implementation of **TRA-EC-1**, construction of Pure Water would not impair or interfere with adopted emergency response or evacuation plans, and impacts would be **less than significant**.

Similar to what is discussed above under *Program-Level Analysis*, permanent long-term operation of facilities and components at the Joint Treatment Site would not result in inadequate emergency access since regular daily operations would not require traffic detours, lane closures, street closures, or intersection closures. Vehicular trips associated with operations at the Joint Treatment Site would include chemical deliveries, staff commute and visitor trips to and from the AWP Facility, and trainee trips to and from the Workforce Training Center. These trips would not be of an amount that would result in congestion in a manner that would affect emergency response and evacuation. The backbone pipeline would be underground and would require occasional maintenance/patrol trips that would also not be of an amount that would result in congestion. As such, long-term operational impacts would not impair or interfere with adopted emergency response or evacuation plans, and impacts would be **less than significant**.

5.7.5.5 Topic 5: Wildland Fires

Would Pure Water expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Program-Level Analysis

As discussed above in Section 5.7.1.4, VHFHSZs in the Pure Water area occur in association with the San Gabriel Mountains in the northern portion of the Pure Water area and at two locations along and near the backbone alignment in association with the Santa Fe Dam Recreation Area and Puente Hills. Potential wildland fire impacts associated with the backbone pipeline are discussed in detail below under *Project-Level Analysis.* The VHFHSZs associated with the San Gabriel Mountains occur near the general area identified for the DPR pipeline. However, the areas designated as VHFHSZs are areas containing vegetation on sloped, undeveloped land. Based on the sloped topography, these are areas that would be unsuitable for location of the DPR pipeline from a hydraulic engineering standpoint. For the same reasons, it is not expected that the Whittier Narrows Pump Station would be located within the VHFHSZ associated with the Puente Hills. As such, it is not anticipated that construction of these facilities and components would occur within VHFHSZs or be located in an area that would expose people or structures to substantial fire risk during operations. The Santa Fe Pump Station and/or associated electrical substation and transmission lines could potentially be located within a VHFHSZ in or near the Santa Fe Dam Recreation Area. Construction of these facilities would involve the use of equipment with combustion engines, which could increase fire hazards from ignition of flammable vegetation where such vegetation is present. However, construction work would involve initial clearing of vegetation as part of site preparation activities, which would result in the removal of potentially flammable vegetation. Fire extinguishers would also be available onsite during construction. As such, construction of the Santa Fe Pump Station would not exacerbate fire risks in a VHFHSZ. Operationally, the Santa Fe Pump Station (including associated electrical facilities) would comply with applicable requirements of the California Fire Code. In addition, the site would be developed and would not include highly flammable vegetation. As such, it would not be exposed to or pose significant risks from wildland fires. Therefore, impacts related to wildland fires from construction and operation of Pure Water would be **less than significant**.

Project-Level Analysis

The backbone alignment is partially within a VHFHSZ west and north of the Santa Fe Dam Recreation Area and is located near a VHFHSZ (within the Puente Hills) in the Whittier Narrows area (**Figure 5.7-2**). The first onsite construction activity for the backbone pipeline would involve clearing of vegetation as part of site preparation activities, which would result in the removal of potentially flammable vegetation. Removal of this vegetation and provision of fire extinguishers on site would minimize potential risks associated with the use of equipment with combustion engines. As such, construction of the backbone pipeline would not exacerbate fire risks in the VHFHSZ in the vicinity of the Santa Fe Dam Recreation Area. Construction activities for the backbone pipeline in the Whittier Narrows area would not be located within or immediately adjacent to a VHFHSZ and would not exacerbate fire risks. In addition, a large portion of backbone pipeline construction in the Whittier Narrows area would occur via tunneling methods, which would generally not require the use of aboveground construction equipment with combustion engines in areas with vegetation. Further, the presence of construction workers in and/or near VHFHSZs would be temporary. Upon completion of construction, the backbone pipeline would be located underground. As such, construction of the backbone pipeline would not expose people

or structures to significant risk of loss, injury, or death involving wildland fires. Upon completion of construction, the backbone pipeline would be located underground and would not result in risk associated with wildland fires. Impacts would be **less than significant**.

The Joint Treatment Site is not located within or near a VHFHSZ, as the surrounding area is developed and does not contain large amounts of potentially flammable vegetation. Construction and operation of the Joint Treatment Site facilities and components would therefore not expose people or structures to significant risk of loss, injury, or death involving wildland fires. **No impact** would occur.

5.7.5.6 Per- and Poly-fluoroalkyl Substances

PFAS are a large group of synthetic (man-made) compounds with a history of use across a wide range of industrial and manufacturing sectors. First synthesized in the 1930s, the use of PFAS proliferated in the ensuing decades due to their favorable properties, including thermal and chemical stability. However, because PFAS are so resistant to degradation, they can persist for long periods in many different settings. In addition, PFAS are relatively mobile in both natural and engineered systems. As a result, PFAS are now nearly ubiquitous in the environment.

In recent years, PFAS have been identified as chemicals of emerging concern. Certain PFAS have been linked to a range of health effects, including increased blood pressure, decreased fertility, developmental delays, reduced immune system efficiency, and obesity. Still, PFAS-related research is in its early stages, and the specific health and environmental impacts of most PFAS are not well understood. This research is complicated by the fact that there are thousands of unique PFAS compounds. Thus, not surprisingly, only a handful of PFAS currently are subject to regulation.

Given the limited information and regulatory guidance currently available for PFAS, it is not feasible to assess potential impacts using the same analytical approach and significance criteria used above for other hazardous materials. As such, a separate, qualitative analysis of PFAS-related potential impacts is provided below.

Impact Analysis

The USEPA has identified industrial and manufacturing categories commonly associated with the application and use of PFAS. These include aviation and aerospace; cosmetics and personal care products; pulp, paper, and paperboard manufacturing; textile mills; electroplating; metal finishing; leather tanning and finishing; paint formulating; electrical and electronic components; firefighting; and plastics molding and forming. Several of these categories are the focus of formal rulemaking, while others are being targeted for more study, data review, and/or monitoring. In contrast to these industries, Pure Water is a water purification project that does not involve any processes that would generate PFAS. Likewise, the current and historical activities at the Warren Facility are not ones typically associated with PFAS use.

However, the AWP Facility would be located at or near the site of the former Fletcher Oil Refinery, where PFAS may have been used in the past for industrial purposes. In addition, the refinery experienced a fire (Daily Breeze 2017), which may have been extinguished using firefighting materials containing PFAS. Therefore, it is conservatively assumed that PFAS-impacted soils may be encountered

during construction of Pure Water's AWP Facility.[2] Likewise, PFAS may be encountered during excavation, tunneling, and dewatering work for other Pure Water facilities and components, which would be located primarily in urban and industrial areas. Accordingly, prior to any ground-disturbing activities, sampling for PFAS would be conducted as appropriate, based on existing site conditions and available information. If detected, PFAS-impacted media would be managed in accordance with applicable federal, state, and local laws, rules, regulations, and permits. Where appropriate, **HAZ-EC-2** and **HAZ-EC-3** also would be followed.

During AWP Facility operation, RO filtration would produce a permeate stream of purified water and a liquid residual concentrate stream, the latter of which may contain higher concentrations of PFAS relative to the wastewater influent. However, the residual concentrate stream would not contain more PFAS by mass than the influent, so no PFAS would be added to the Warren Facility's current ocean discharges as a result of Pure Water operations. This residual concentrate stream would be discharged in compliance with the Warren Facility's existing permitting requirements (see also Section 5.8, *Hydrology and Water Quality*).

Possible impacts associated with RO membrane residuals also were considered. These membranes are not expected to retain PFAS given regular maintenance. Nonetheless, at the end of their service lives, samples of the membranes would be tested for PFAS and, if present, managed in accordance with applicable federal, state, and local laws, rules, regulations, and permits and implementation of **HAZ-EC-1**.

Through implementation of the identified environmental commitments, as well as compliance with federal, state, and local regulations, impacts associated with PFAS would be **less than significant**.

5.7.6 Level of Significance Before Mitigation

Impacts associated with the transport, use, disposal, or accidental release of hazardous materials; reasonably foreseeable upset and accident conditions involving the release of hazardous materials; potential for emissions or handling of hazardous materials within one-quarter mile of a school; documented and currently unknown hazardous materials sites; airport hazards; emergency response and evacuation; exposure to risks involving wildland fires; and PFAS would be **less than significant**.

5.7.7 Mitigation Measures

Impacts associated with hazards and hazardous materials would be less than significant; therefore, no mitigation is required.

5.7.8 Level of Significance After Mitigation

As described above, impacts associated with hazards and hazardous materials would be **less than significant without mitigation**.

[2] As discussed in other sections, groundwater is not expected to be encountered during construction of the AWP Facility.

5.7.9 References

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5.8 HYDROLOGY AND WATER QUALITY

This section addresses the potential hydrology and water quality impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

HYDROLOGY AND WATER QUALITY LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

As discussed earlier in Chapter 2, *Project Overview and Background*, Pure Water developed the NIC to test and optimize a proposed advanced water purification process and to prove the technology's viability as needed for regulatory approval. Data from the NIC have also been utilized to demonstrate Pure Water's ability to meet groundwater basin water quality objectives and to assess proposed RO concentrate discharges to the ocean as a result of Pure Water. The program-level analysis herein is based on studies prepared by Metropolitan regarding groundwater (Metropolitan 2025 and 2024; Appendices G1 and G2) and a study prepared by Sanitation Districts regarding RO concentrate discharge compliance (LACSD 2022; Appendix G3), as well as readily available, general information derived from applicable resource and planning documents. The discussion and analysis in this section related to impacts of the project-level components are informed by the Hydrology and Water Quality Study prepared for the Joint Treatment Site and backbone pipeline (Rick Engineering Company 2024; Appendix G4).

5.8.1 Existing Conditions

Existing conditions are described below for surface waters, groundwater, and discharges from the existing Warren Facility outfall. The discussion on surface waters is further divided into watersheds, surface water quality, floodplains, and tsunami and seiche hazards within the Pure Water area. The groundwater discussion describes the groundwater basins that would be recharged by Pure Water, including the West Coast, Central, and Main San Gabriel basins.

5.8.1.1 Surface Waters

Watersheds

Watersheds are geographic areas draining into a river system, ocean, or other body of water through a single outlet and include the receiving waters. They are usually bordered and separated from other watersheds by mountain ridges or other naturally elevated areas. Pure Water facilities are located within the Dominguez Channel, Los Angeles River, and San Gabriel River watersheds (**Figure 5.8-1**), which are described below.

Dominguez Channel

The Dominguez Channel Watershed spans 133 square miles of southwest Los Angeles County, extending from just north and east of Los Angeles International Airport at its north end to Los Angeles Harbor in the community of Wilmington in the City of Los Angeles at its south end, where the Dominguez Channel ends. The watershed also encompasses the north-facing slopes of the Palos Verdes Hills. The Dominguez Channel Watershed primarily overlays the West Coast Basin.

The Dominguez Channel is the primary drainage channel in the watershed. It extends 15 miles from south of 116th Street in the City of Hawthorne and empties into the Port of Los Angeles in San Pedro Bay in the Pacific Ocean. The Dominguez Channel is concrete lined for most of its length and the flow consists primarily of stormwater and urban runoff.

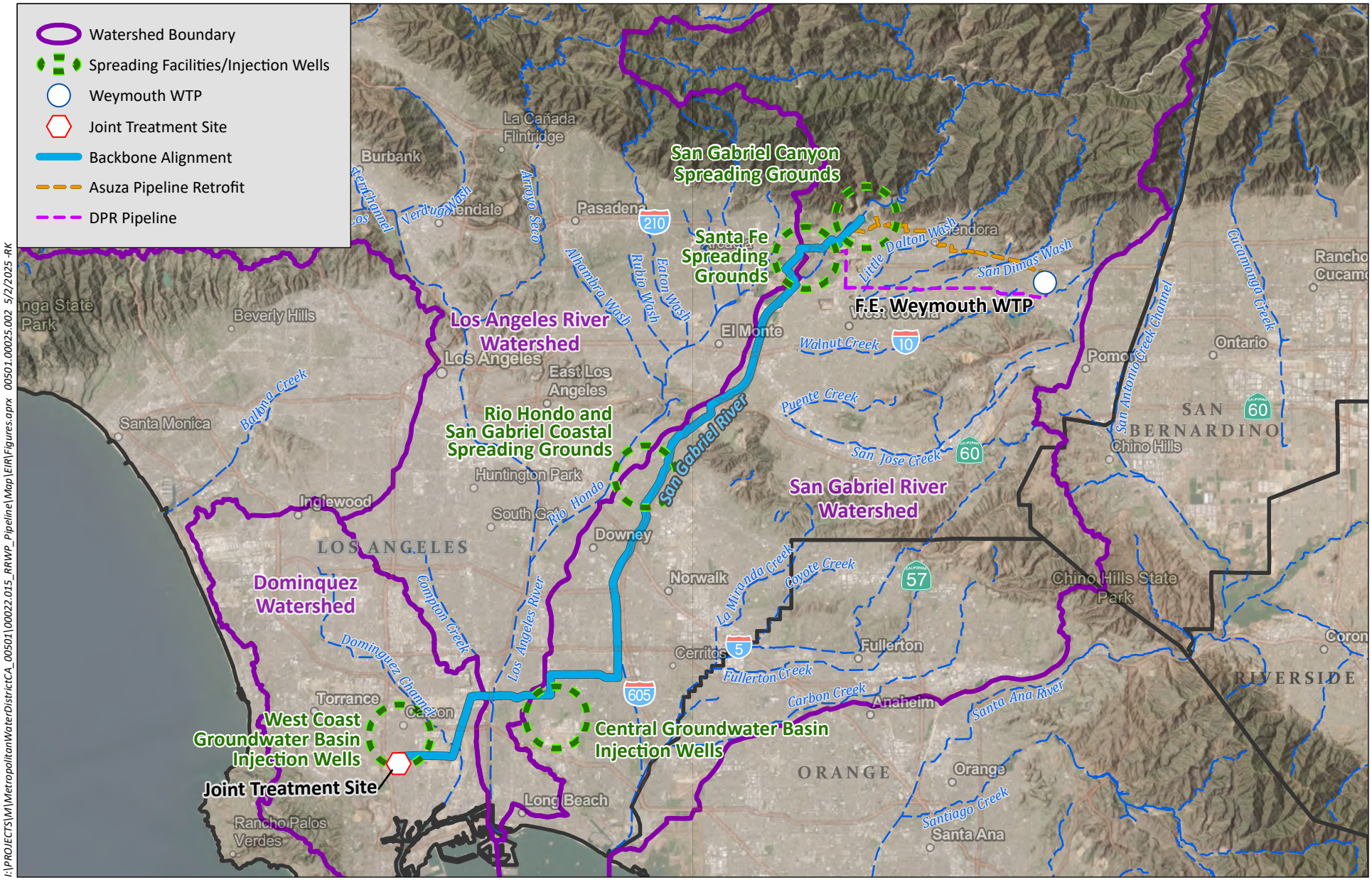
The backbone pipeline would cross the Dominguez Channel at Alameda Street in the City of Carson.

Los Angeles River

The Los Angeles River Watershed spans 830 square miles of western, central, and southern Los Angeles County and some small areas of eastern Ventura County. The watershed extends from the San Gabriel Mountains on the northeast to the Santa Susana Mountains and Santa Monica Mountains on the northwest and west, respectively, and extends south to the mouth of the Los Angeles River in the City of Long Beach. The Los Angeles River watershed overlays the Raymond, Main San Gabriel, Central, and West Coast groundwater basins.

The Los Angeles River, which is the primary river in the watershed, extends 48 miles from the confluence of Bell Creek and the Arroyo Calabasas in the southwest San Fernando Valley to the Pacific Ocean at the City of Long Beach. Major tributaries to the Los Angeles River in the San Fernando Valley are the Pacoima Wash and Tujunga Wash (both of which drain portions of the Angeles National Forest in the San Gabriel Mountains) and the Burbank Western Channel and Verdugo Wash (both of which drain the Verdugo Mountains). Due to major flood events at the beginning of the 20th century, by the 1950s most of the Los Angeles River was lined with concrete. Dams in the Los Angeles River watershed include the Big Tujunga Dam, Pacoima Dam, Devil's Gate Dam, Santa Anita Dam, and Eaton Wash Dam.

The Los Angeles River is hydraulically connected to the San Gabriel River Watershed by the Rio Hondo through the Whittier Narrows Dam and Reservoir area. Flows from the San Gabriel River and Rio Hondo merge during larger flood events; thus, flows from the San Gabriel River Watershed may impact the Los Angeles River south of Whittier Narrows Dam and Reservoir. Below this point, the Rio Hondo flows into the Los Angeles River. The Whittier Narrows area is a low point between the Puente Hills and Merced Hills, which forms the southern boundary of the San Gabriel Valley. Most of the water in the Rio Hondo



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Sources: Aerial (Esri 2022); Watersheds (National Hydrographic Database)

PUREWATER SOUTHERN CALIFORNIA

Watersheds

Figure 5.8-1

is used for groundwater recharge during dry weather seasons so flows to the Los Angeles River are generally small.

The backbone pipeline would cross the Los Angeles River at Del Amo Boulevard in the City of Long Beach.

San Gabriel River

The San Gabriel River Watershed spans 905 square miles of east-central and southeast Los Angeles County and part of northwest Orange County. The watershed extends from the San Gabriel Mountains on the north, encompasses the eastern half of the San Gabriel Valley, the Puente Hills, and much of the southeast Los Angeles County, and extends south to the mouth of the San Gabriel River in the City of Seal Beach on the Orange County-Los Angeles County boundary.

The San Gabriel River is the primary river in the watershed and extends about 61 miles from the San Gabriel Mountains to the ocean. Major tributaries to the San Gabriel River include Walnut Creek, San Jose Creek, and Coyote Creek. Smaller tributaries include Big Dalton Creek, Little Dalton Creek, San Dimas Wash, Carbon Creek, Fullerton Creek, and Brea Creek.

Severe floods in 1914, 1934, and 1938 spurred Los Angeles County, and later the federal government, to build a system of dams and debris basins and to channelize much of the lower San Gabriel River with riprap or concrete banks. There is also an extensive system of spreading grounds and other works to capture stormwater runoff and conserve it for urban use. Approximately one-third of the water used in southeast Los Angeles County today comes from the San Gabriel River (LACPW 2005). Dams along the San Gabriel River, or its tributaries, include Cogswell Dam and Reservoir; San Gabriel Dam and Reservoir; Morris Dam and Reservoir; Puddingstone Dam and Reservoir; Live Oak Dam and Reservoir; Thompson Creek Dam; Santa Fe Dam; and Whittier Narrows Dam and Reservoir.

The San Gabriel River has been channelized with levees below Santa Fe Dam to aid in flood prevention. However, the channel was left unlined between Santa Fe Dam and Florence Avenue in Downey to promote infiltration of water released from upstream dams. The Rio Hondo, a distributary[1] of the San Gabriel River, branches from the San Gabriel River just below Santa Fe Dam and flows westward to the Whittier Narrows area. At Whittier Narrows, portions of the flow from San Gabriel River are conveyed to the Rio Hondo by a manmade channel known as Lario Creek. The 10-mile reach from just south of Firestone Boulevard to the confluence with Coyote Creek in the City of Long Beach is a trapezoidal channel lined with concrete both on the sides and the bottom. Within the 3-mile reach from the confluence with Coyote Creek to the mouth of the river (San Gabriel River estuary), the channel has an earthen bottom.

The backbone pipeline would run adjacent to the San Gabriel River starting just north of SR 91 and extend along the SCE ROW to the Santa Fe Dam area. North of the Santa Fe Dam, the backbone pipeline also would cross the San Gabriel River along Huntington Drive toward the San Gabriel Canyon Spreading Grounds.

[1] A branch of a river that flows away from the main stream channel.

Surface Water Quality

Pollutants in surface water in the Pure Water area include sediments, nutrients, trace metals, pathogens, petroleum hydrocarbons, and trash and debris (LACPW 2005, LACPW 2006, SWRCB 2024). In addition, there are specific numeric goals set by the Los Angeles Regional Board for some or all of the following: total dissolved solids (TDS), sulfate, chloride, boron, and nitrogen.

Sediments (Total Suspended Solids and Turbidity)

Excessive erosion, transport, and deposition of sediment in surface waters are a significant form of pollution resulting in water quality impairments. Sediment imbalances impair waters' designated uses. Excessive sediment can impair aquatic life by reducing beneficial habitat structure in stream channels, affecting benthic infauna by filling interstitial spaces of spawning gravels, impairing fish food sources, and filling rearing pools. In addition, excessive sediment can cause taste and odor problems in drinking water supplies and block water intake structures or recharge systems. Sedimentation in any of the river channels can occur after storm or fire events.

Nutrients (Phosphorus and Nitrogen)

Inorganic forms of nitrogen include nitrate, nitrite, and ammonia. Organic forms of nitrogen are associated with vegetative matter such as particulates from sticks and leaves. There are several sources of nutrients in urban areas, mainly fertilizers in runoff from lawns, pet wastes, failing septic systems, and atmospheric deposition from industry and automobile emissions. Nutrient over-enrichment is especially prevalent in agricultural areas where manure and fertilizer inputs to crops significantly contribute to nitrogen and phosphorus levels in streams and other receiving waters. Eutrophication due to excessive nutrient input can lead to changes in algae, benthic, and fish communities; extreme eutrophication can cause hypoxia or anoxia, resulting in fish kills. Surface algal scum, water discoloration, and the release of toxins from sediment can also occur. Various downstream reaches of the Los Angeles River are impaired by nutrients and nitrogen compounds, especially in the reach between Carson Street and Figueroa Street. Evidence of impairment includes observations of excessive algae growth. The Dominguez Channel is not listed as impaired by nutrients. The San Gabriel River watershed is not listed as impaired by nutrients.

Trace Metals (Copper, Lead, and Zinc)

The primary sources of trace metals in stormwater are typically commercially available metals used in transportation (e.g., automobiles), buildings, and infrastructure. Metals are also found in fuels, adhesives, paints, and other coatings. Copper, lead, and zinc are the most prevalent metals typically found in urban runoff. Other trace metals, such as cadmium, chromium, and mercury, are typically not detected in urban runoff or are detected at very low levels. Metals are of concern because of the potential for toxic effects on aquatic life and the potential for groundwater contamination resulting from surface water infiltration to underlying aquifer systems. High metal concentrations can lead to bioaccumulation in fish and shellfish and affect beneficial uses of receiving waters.

Various downstream reaches of the Los Angeles River are identified as impaired for metals, including copper, lead, and zinc. In the Dominguez Channel, trace metals include copper, zinc, and lead. The San Gabriel River estuary is impaired by lead and copper and the San Gabriel River is impaired by aluminum in the reaches between Firestone Boulevard and the Whittier Narrows Dam.

Pathogens (Bacteria, Viruses, and Protozoa)

Elevated pathogens are typically caused by the transport of domestic animal, wildlife, or human fecal wastes from the watershed. Runoff that flows over land such as urban runoff can mobilize pathogens, including bacteria and viruses. Even runoff from natural areas can contain pathogens (e.g., from wildlife). Other sources of pathogens in urban areas include pets, sanitary sewer pipes, and recreational vehicle waste discharges to the storm sewer system. The presence of pathogens in runoff can impair receiving waters and contaminate drinking water sources.

Many of the downstream reaches of the Los Angeles River and Dominguez Channel are identified as impaired by high fecal indicator bacteria counts. The San Gabriel River is impaired by fecal indicator bacteria including in the San Jose Creek Channel.

Petroleum Hydrocarbons (Oil and Grease and Polycyclic Aromatic Hydrocarbons) and Pesticides

The sources of oil, grease, and other petroleum hydrocarbons in urban areas include spillage of fuels and lubricants, discharge of domestic and industrial wastes, atmospheric deposition, and runoff. Runoff can be contaminated by leachate from road surfaces, wearing of tires, and deposition from automobile exhaust. Petroleum hydrocarbons, such as polycyclic aromatic hydrocarbons, can bioaccumulate in aquatic organisms from contaminated water, sediments, and food and are toxic to aquatic life at low concentrations. Excessive application of pesticides (including herbicides, insecticides, and fungicides) used to control insects, rodents, plant diseases, and weeds may result in runoff containing toxic levels of the active component.

The Los Angeles River and estuary are impaired because of legacy pesticides such as chlordane and DDT. Similarly, the Dominguez Channel is also impaired because of chlordane. The San Gabriel River Estuary is also listed for chlordane. The Los Angeles River and estuary and San Gabriel River are both impaired by oil and grease.

Trash and Debris

Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic debris (such as leaves, grass cuttings, and food waste) are general waste products on the landscape that can be entrained in urban runoff. The presence of trash and debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a water body and thereby lower its water quality. Also, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide. Trash is a pollutant of concern for the Los Angeles River Watershed throughout most of its length. Trash is a not a pollutant of concern in the Dominguez Channel and the San Gabriel River.

Floodplains

A floodplain is any land area that can be flooded by water from any source and is typically located next to bodies of water such as rivers, lakes, or streams and is prone to flooding during periods of high water flow. The 100-year flood is the standard used by most federal and state agencies including the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program as the standard for

floodplain management. The 100-year floodplains located in the Pure Water area are shown in **Figure 5.8-2**.

Tsunami and Seiche Hazard Areas

A tsunami is a series of ocean waves generated by earthquakes, landslides, or volcanic activity that displaces a relatively large volume of water in a very short period. Seiches are defined as oscillations in a land-locked body of water usually spurred by wind or air pressure differences. The proposed Pure Water facilities are not in proximity to the Pacific Ocean or large lakes or reservoirs. At their closest points, the Joint Treatment Site and backbone alignment are 1.9 miles and 1.4 miles, respectively, from a tsunami hazard area, as identified by the California Department of Conservation (2025).

5.8.1.2 Groundwater

Groundwater refers to water that is stored underground in saturated layers of soil and rock beneath the earth's surface. Aquifers are underground formations of porous rock or sediment that hold groundwater. These formations can store and transmit significant amounts of water. A groundwater basin is a series of aquifers with well-defined boundaries. Los Angeles County contains 21 groundwater basins. The groundwater basins that would receive purified water from Pure Water include the West Coast Basin, Central Basin, and Main San Gabriel Basin via spreading facilities and injection wells. The locations of these basins are depicted on **Figure 5.8-3** and their characteristics are summarized below**.**

West Coast Basin

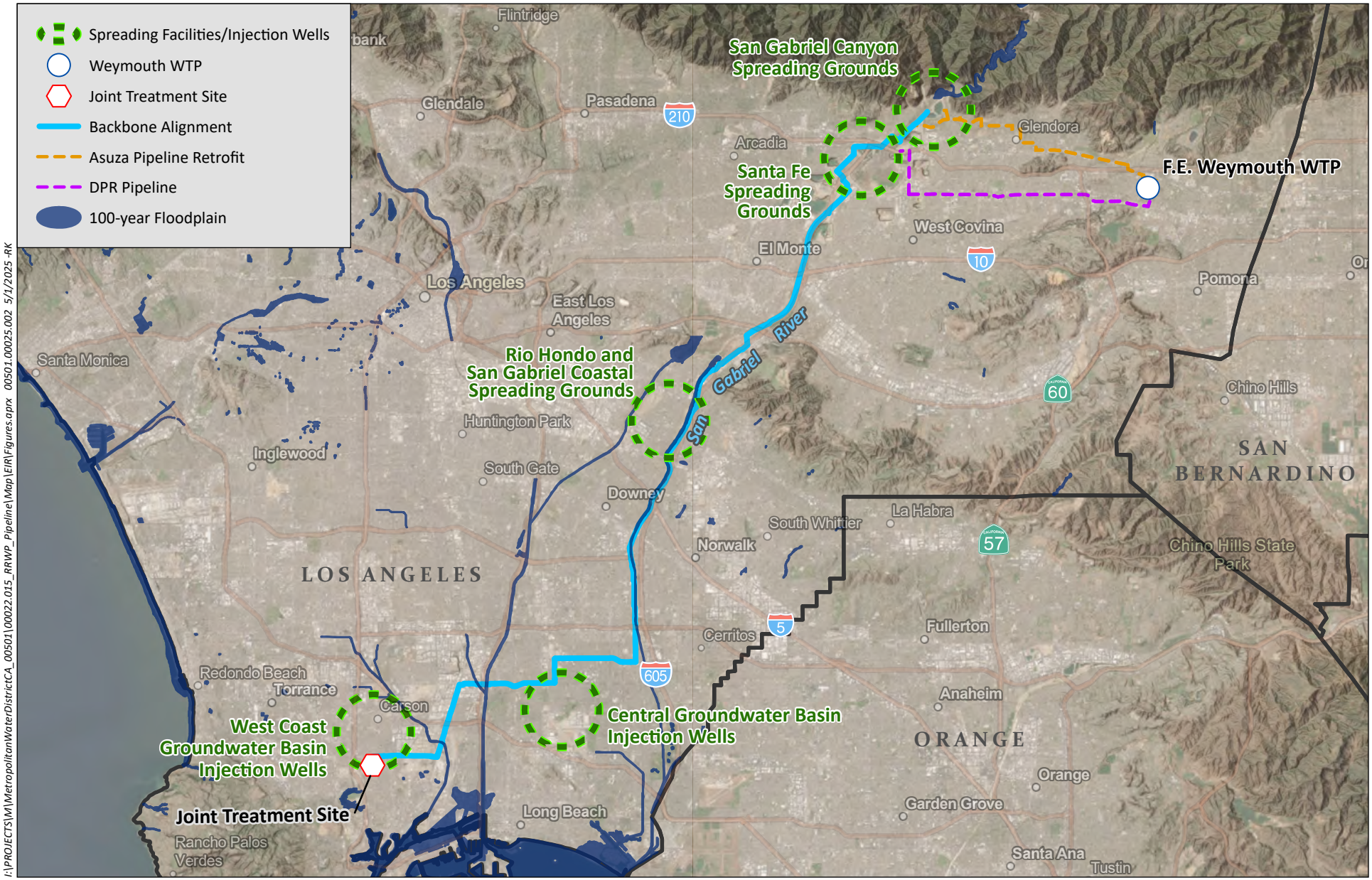
Background

The West Coast Basin is located in the southwestern part of the Los Angeles Coastal Plain, underlying the service areas of the following Metropolitan member agencies: West Basin MWD, City of Los Angeles, City of Torrance, and City of Long Beach.

Increased groundwater pumping in the early 20th century caused groundwater levels to fall below sea level throughout much of the West Coast Basin by the 1920s (Land et al. 2004). As a result, seawater began moving into groundwater basins from both Santa Monica Bay and San Pedro Bay. By the 1940s, elevated concentrations of chloride from seawater intrusion were present in all coastal groundwater basins. In the 1950s, a method was developed to inject imported water into the groundwater basin to prevent seawater from intrusion. This practice is now known as the West Coast Basin Barrier Project and continues to operate today. Recharge of the basin comes from imported water from Metropolitan and recycled water from West Basin MWD. Similarly, seawater intrusion required the installation of a seawater intrusion barrier in 1971, which injects imported water from Metropolitan and recycled water from the City of Los Angeles into the West Coast Basin and is now known as the Dominguez Gap Barrier.

Recharge and Pumping

Groundwater rights and pumping restrictions in the West Coast Basin were adjudicated in court proceedings that were finalized in 1961 and 1966, which determined how much water could be pumped, who is authorized to pump the groundwater, and who is responsible for conducting the recharge operations. Groundwater pumping was capped at 64,468 AFY. Over the past 10 years, an average of approximately 34,000 AFY has been pumped from the West Coast Basin, which is about half



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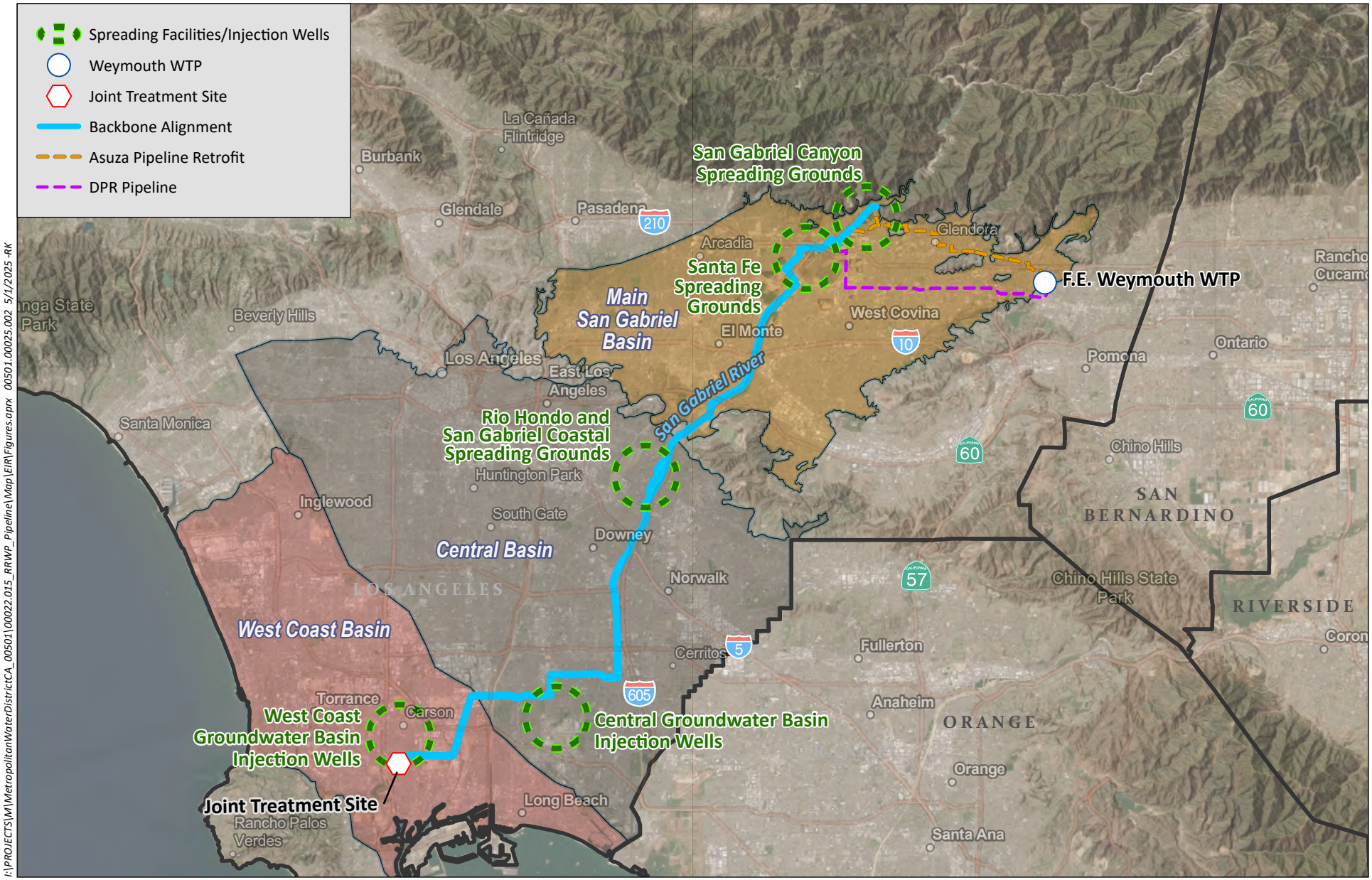
Sources: Aerial (Esri 2022); Floodplains (Los Angeles County)

PUREWATER SOUTHERN CALIFORNIA

100-year Floodplains

Figure 5.8-2



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Sources: Aerial (Esri 2022)

PUREWATER SOUTHERN CALIFORNIA

Groundwater Basins

Figure 5.8-3

of the adjudicated allocation. Since 1970, groundwater levels in the basin's key well[2] have increased more than 50 feet due to reduced pumping and ongoing recharge. The West Coast Basin has a total storage capacity of 6.5 million AF, 125,000 AF of which is unused and available for storage. An annual assessment is prepared by the WRD, which oversees groundwater recharge operations in the West Coast Basin, to determine recharge needs. Storage and pumping rights are identified in the adjudication.

Groundwater Quality

Since the 1950s, saltwater intrusion has been an issue in coastal groundwater basins, including the West Coast Basin. Saltwater intrusion is the subsurface movement of ocean water into freshwater groundwater basins in coastal and inland areas, usually caused by excessive groundwater pumping.

The water quality in the West Coast Basin is generally considered good but can be impacted by saltwater intrusion which can lead to elevated salinity levels in certain areas of the basin. Concentrations of TDS in the West Coast Basin range from 150 milligrams per liter (mg/L) to more than 13,000 mg/L. Most water in the West Coast Basin has TDS concentrations of less than 500 mg/L (Land et al. 2004), which is below the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) threshold of 800 mg/L. Most of the water with high (i.e., greater than 1,000 mg/L) TDS concentrations is in the shallow aquifer systems, and several have dissolved chloride values near that of seawater. Groundwater quality in the West Coast Basin is regulated by the Los Angeles Regional Board's Basin Plan (refer to Section 5.8.2.3).

Central Basin

Background

The Central Basin is located in the central part of the Los Angeles Coastal Plain, bordered by the San Gabriel River to the east and the Rio Hondo and Los Angeles River to the west. This basin underlies the service areas of the following Metropolitan member agencies: Central Basin MWD, West Basin MWD, City of Compton, City of Los Angeles, and City of Long Beach.

The first water wells in the Central Basin were drilled in the mid-1800s. By the early 1900s, there were more than 4,000 wells. From 1900 to 1930, pumping increased considerably due to increasing urban demand, lack of surface water supplies, and development of the deep well turbine, which made it possible to extract water from deeper depths (Reichard et al. 2003). In the early 1960s, there were large decreases in pumping and large increases in injection and spreading rates due to the use of water imported from the SWP and the Colorado River and the use of recycled water for groundwater replenishment. The Central Basin was adjudicated in 1965, whereby groundwater rights and limits to groundwater extraction were established. The Central Basin has a total storage capacity of 13.8 million AF, 340,000 AF of which is unused and available for storage. An annual assessment is prepared by WRD, who oversees groundwater recharge operations in the Central Basin, to determine recharge needs. Storage and pumping rights are identified in the adjudication.

[2] A key well in the context of groundwater refers to a specific well that is used as a primary monitoring point to track the overall level of groundwater in a particular area, providing crucial data on the health of the aquifer and allowing water managers to assess changes in water availability over time; essentially, it acts as a key indicator of the groundwater system in that location.

Recharge and Pumping

Natural replenishment of groundwater in the Central Basin occurs largely from surface flow and underflow of the San Gabriel River in the Whitter Narrows area, along with rainfall. Managed replenishment of groundwater is accomplished by capturing and spreading water at the Rio Hondo Spreading Grounds and San Gabriel Coastal Spreading Grounds in the City of Pico Rivera, both of which are owned and operated by LACPW. The Rio Hondo Spreading Grounds have an area of 570 acres and the San Gabriel Coastal Spreading Grounds have an area of 128 acres. Sources of replenishment include local stormwater runoff, dry weather urban runoff, imported water purchased from Metropolitan, and recycled water purchased from the Sanitation Districts.

Since the 1950s, saltwater intrusion has been an issue in coastal groundwater basins, including the Central Basin. Seawater intrusion poses a threat to the groundwater in the Central Basin. Thus, recharge in the Central Basin also occurs for the Alamitos Gap Seawater Barrier Project. The Alamitos Gap Seawater Barrier Project is located near the mouth of the San Gabriel River and includes injection wells supplied by recycled and imported water that create a groundwater pressure ridge to prevent seawater intrusion. Four aquifer storage and recovery wells owned and operated by the City of Long Beach are used for both injection and extraction, playing a key role in managing groundwater storage and withdrawal.

The Central Basin receives imported water from Metropolitan for groundwater replenishment. The discharge point for the service connection, CENB-48, is located adjacent to the San Dimas Wash, southwest of the San Dimas Canyon Spreading Grounds in the City of San Dimas. From this location, the discharged water extends to the San Gabriel Coastal and Rio Hondo spreading grounds to ultimately recharge the basin. Over the past 25 years, an average of approximately 9,800 AFY of imported water has been released by Metropolitan from CENB-48 into the San Dimas Wash.

Groundwater Quality

The quality of most water in the Central Basin is suitable for industrial and municipal water use. TDS and chloride concentrations are low throughout most of the aquifers in the basin, often less than 500 mg/L. In several areas, however, particularly shallow units and coastal regions, TDS and sulfate concentrations exceed 500 mg/L (Reichard et al. 2003). In some portions of the basin, manganese and iron concentrations exceed drinking water standards. The Central Basin also contains VOCs, primarily tetrachloroethylene (PCE) and trichloroethylene (TCE), and per- and polyfluoroalkyl substances (PFAS) that are above applicable standards, which have impacted water quality in production wells in certain areas. In response, WRD launched the PFAS Remediation Program in August 2020, where currently over $60 million in grant funding has been established for water purveyors seeking to install treatment systems for drinking water wells located in the Central Basin that contain PFAS above maximum contaminant levels (MCLs) (WRD 2025). Groundwater quality in the Central Basin is regulated by the Los Angeles Regional Board's Basin Plan (refer to Section 5.8.2.3).

Main San Gabriel Basin

Background

The Main San Gabriel Basin is located in the eastern part of Los Angeles County, underlying most of the San Gabriel Valley and the service areas of the following Metropolitan member agencies: Upper San Gabriel MWD, Three Valleys MWD, and the City of San Marino.

Beginning in the 1940s, the San Gabriel Valley experienced a period of rapid urbanization, which led to an increased demand for water from the San Gabriel Basin, resulting in concerns about declining water levels as the basin's natural recharge couldn't keep pace with the demand for water. The Main San Gabriel Basin was adjudicated in 1973, which established groundwater pumping rights and restricts how much water can be pumped from the basin. The Main San Gabriel Basin Judgement, or adjudication, established the Main San Gabriel Watermaster (Watermaster) who is charged with administering the adjudication and protecting the groundwater basin. Water rights are determined each year by the Watermaster by establishing an operating safe yield based upon current conditions. The operating safe yield is the quantity of water which the Watermaster determines may be pumped from the basin in a year, without incurring replenishment assessments. Replenishment assessments are assessed against all producers that exceed their allocation of the operating safe yield – the monies from the replenishment assessments are used by the Watermaster to purchase supplemental supplies (such as Pure Water) to recharge the basin. The operating safe yield has averaged approximately 150,000 AFY since 1973. The current operating safe yield is 160,000 AFY.

Today, the Main San Gabriel Basin continues to face challenges related to water sustainability, including managing groundwater levels, addressing potential contamination, and balancing the needs of urban development with environmental concerns.

Recharge and Pumping

Natural replenishment of groundwater in the Main San Gabriel Basin occurs primarily from rainfall and runoff from the nearby San Gabriel Mountains. In addition to these sources for groundwater replenishment, the basin is also recharged with imported water purchased from Metropolitan. Replenishment of groundwater is primarily accomplished by capturing and spreading water at 17 spreading basins, 16 of which are owned and operated by LACPW and 1 of which is owned and operated by the California-American Water Company. Collectively, these 17 spreading basins cover more than 1,100 acres. The Santa Fe Spreading Grounds and San Gabriel Canyon Spreading Grounds are two of the largest spreading basins in the Main San Gabriel Basin and are owned and operated by LACPW.

Total historical groundwater recharge, including stormwater runoff and imported water, is approximately 141,000 AFY. The average imported groundwater recharge over the past 10 years in the Main San Gabriel Basin is approximately 47,000 AFY, approximately 43,000 AFY (or approximately 39 MGD) of which is spread primarily at the Santa Fe Spreading Grounds (Main San Gabriel Watermaster 2023a). Over the past several years, natural recharge to the basin has been about half of the historical average, leading to falling groundwater levels in key monitoring wells that are used by the Watermaster to determine the health of the basin. However, increased stormwater flows in water years 2023 and 2024 resulted in significant recovery in water levels and storage in the basin. The Main San Gabriel Basin has a total storage capacity of 8.6 million AF, 145,000 AF of which is unused and available for storage.

The Main San Gabriel Basin currently receives imported water from Metropolitan for groundwater replenishment. There are two service connections that provide this water: PM-26 and USG-3. The discharge point for service connection PM-26 is located in the City of Glendora at the northeastern end of the Little Dalton Spreading Grounds, which directly recharges the basin. Over the past 25 years, an average of approximately 1,100 AFY of imported water has been released by Metropolitan from service connection PM-26 into the Little Dalton Spreading Grounds.

The discharge point for service connection USG-3 is located along the San Gabriel River, south of Morris Reservoir and north of the City of Azusa in the unincorporated portion of Los Angeles County. Over the past 25 years, an average of approximately 30,000 AFY of imported water has been released by Metropolitan from service connection USG-3 into the San Gabriel River.

Groundwater Quality

The water quality of the Main San Gabriel Basin is typically suitable for municipal and industrial uses. The average TDS in the representative wells in the Main San Gabriel Basin is between 280 and 301 mg/L, generally below 500 mg/L. Other constituents of concern in the basin include nitrate, hexavalent chromium, perchlorate, and PFAS compounds.

The primary water quality issue in the Main San Gabriel Basin is VOC contamination caused by historical ground disposal of industrial solvents and other pollutants. VOC contamination in the basin was first detected in 1979. VOCs such as 1,1-Dichloroethylne (1,1-DCE), 1,1-Dichloroethane (1,1-DCA), 1,2-DCA, cis,1,2-DCE, methyl chloride, carbon tetrachloride, PCE, and TCE are present in the basin.

In 1984, the USEPA added approximately 30 square miles within the San Gabriel Valley to the NPL under CERCLA, commonly known as Superfund. Superfund, or CERCLA, is a federal law that aims to clean up hazardous waste sites and protect human health and the environment. Primary contaminants of concern for the San Gabriel Valley Superfund site include TCE (commonly used for degreasing and cleaning), PCE (a component of solid rocket fuel), and carbon tetrachloride (used to make chlorofluorocarbon propellants and refrigerants). There are five operable units of Superfund sites in the Main San Gabriel Basin. Several water treatment facilities have been constructed within the basin to treat contaminated groundwater underlying the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente, and Industry. Groundwater quality in the Main San Gabriel Basin is regulated by the Los Angeles Regional Board's Basin Plan (refer to Section 5.8.2.3).

5.8.1.3 Outfall Discharge

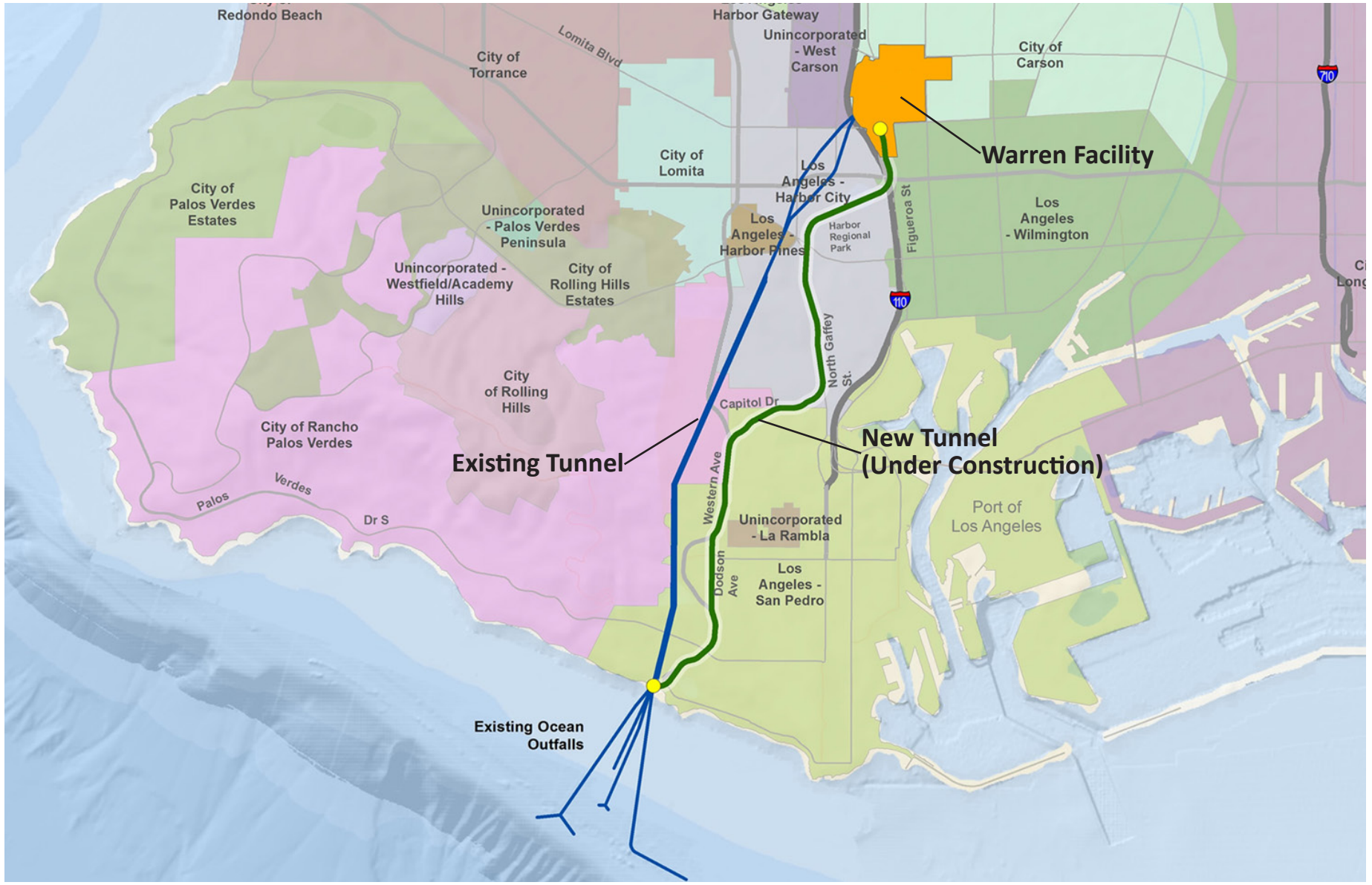
The Warren Facility currently provides primary and secondary wastewater treatment for an average of approximately 250 MGD and discharges disinfected secondary effluent to the ocean via its outfall two miles offshore and 200 feet deep into the Pacific Ocean at White Point off the Palos Verdes Peninsula (**Figure 5.8-4**).

5.8.2 Regulatory Framework

5.8.2.1 Federal

Clean Water Act

The Federal Water Pollution Control Act (also known as the CWA of 1972) provides the basic structure for establishing water quality standards for surface waters (e.g., lakes, rivers, streams) and for regulating the discharge of pollutants into such waters (33 U.S.C. Section 1251 *et seq*.). Section 305(b) requires each state to submit biennial reports to the USEPA describing the water quality of all "navigable waters" within that state (33 U.S.C. Section 1315(b)). Section 303(d), in turn, requires each state to prepare a list of impaired waters that do not meet applicable water quality standards (WQS) and to develop total maximum daily loads (TMDLs) aimed at restoring compliance with such WQS (33 U.S.C. 1313(d)).



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PUREWATER SOUTHERN CALIFORNIA

Sanitation Districts Ocean Outfall System

Figure 5.8-4

The NPDES serves as the primary mechanism to ensure that surface water quality is adequately protected, maintained and/or restored (33 U.S.C. Section 1342). CWA Section 402 prohibits the discharge of any pollutant or combination of pollutants to waters of the U.S. unless it occurs pursuant to and in compliance with a NPDES permit. A NPDES permit typically contains technology-based effluent limitations, water-quality-based effluent limitations, and other requirements aimed at ensuring all applicable WQS are met. NPDES permits are required for almost any type of discharge from a point source, including those involving industrial wastewater, municipal wastewater, and stormwater. NPDES permits can be either general (applying to a broad category of activities) or specific (applying to a particular facility). Pursuant to Section 402(b), California has been delegated the authority to implement its own water pollution control program under the CWA, including setting WQS and issuing NPDES permits (USEPA 2025).

The CWA also regulates other activities that may affect water quality. CWA Section 401 requires that an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. obtain a Section 401 certification from the state in which the discharge originates and declare that the discharge will comply with applicable provisions of the CWA, including water quality standards (33 U.S.C. Section 1341). CWA Section 404 prohibits the discharge of any dredged or fill material into waters of the U.S., including wetlands, unless they are done pursuant to and in compliance a permit issued by the USACE under CWA Section 404 (33 U.S.C. Section 1344). CWA Sections 401 and 404 are discussed in more detail in Section 5.2, *Biological Resources*.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) (42 U.S.C. Section 300f, *et seq*.) was established in 1974 to protect the quality of drinking water in the U.S. This law authorizes the USEPA to establish minimum standards to protect tap water and requires all owners or operators of public water systems to comply with these primary (health-related) standards.

Drinking Water Standards and Health Advisories

The USEPA has established limits for more than 90 contaminants in drinking water. In the federal process, the USEPA first establishes MCL goals. Each goal is the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, allowing an adequate margin of safety. Once the goal is established, the USEPA sets an enforceable standard. In most cases, the standard is the MCL. Under the SDWA, the USEPA promulgates national primary drinking water standards specifying MCLs for contaminants present in a public water system that can have an adverse effect on human health, taking into consideration cost and technical feasibility. When there is no reliable method that is economically and technically feasible to measure a contaminant at concentrations to indicate there is not a public health concern, the USEPA sets a "treatment technique" rather than an MCL. A treatment technique is an enforceable procedure or level of technological performance that public water systems must follow to ensure control of a contaminant. If the USEPA decides not to regulate a contaminant, then it may decide to develop a health advisory, which is a non-enforceable federal level. The health advisory serves as technical guidance for federal, state, and local officials.

Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA was passed in 1980 to address the release of hazardous substances from abandoned or improperly managed waste sites. CERCLA gives the USEPA the authority to regulate hazardous

substances, respond to releases, and develop long-term solutions. It also holds the owners and operators of hazardous waste sites, as well as any contributors or transporters of hazardous substances to a site, jointly and strictly liable for cleanup costs. CERCLA created a trust fund, or "Superfund," to clean up these abandoned or uncontrolled hazardous waste sites. The fund is financed by a tax on the chemical and petroleum industries. Since enacted, Superfund has appropriated more than $32 billion to help clean up contaminated sites.

5.8.2.2 State

Agencies

State Water Resources Control Board

In 1949, the Dickey Water Pollution Control Act established a State Water Pollution Control Board and nine Regional Water Pollution Control Boards (which were later re-named as Regional Water Quality Control Boards, and herein referred to as Regional Boards). In 1963, the State Water Pollution Control Board was renamed the State Water Quality Control Board. In 1967, the State Water Quality Control Board and the State Water Rights Board merged to form the SWRCB. Together, the SWRCB and the nine Regional Boards (further discussed below) have primary responsibility for implementing and enforcing the Porter-Cologne Water Quality Control Act (Porter-Cologne Act; further discussed below) and the CWA. The SWRCB and the Regional Boards are responsible for preserving, protecting, enhancing, and restoring water quality; setting statewide water quality standards; issuing permits; conducting surface and groundwater monitoring and assessments; and issuing orders for cleaning up contaminated sites. The SWRCB and Regional Boards work with federal, state, and local agencies, as well as other environmental agencies, to ensure a coordinated approach to protecting human health and the environment.

Regional Water Quality Control Boards

The Porter-Cologne Act established the current form of the nine Regional Boards that implement and enforce the CWA (including Section 402, Section 303(d), and Section 305(b)) and state-adopted water quality control plans. The Regional Boards are responsible for ensuring clean water within their regions by regulating activities that could negatively impact water quality. Specific tasks include developing and enforcing water quality standards within their designated watersheds, including setting waste discharge requirements, monitoring water quality, and taking enforcement actions to protect the beneficial uses of the state's waters. The Pure Water area falls under the jurisdiction of the Los Angeles Regional Board (Region 4). Each Regional Board is responsible for water quality control planning within its region, including the preparation of a basin plan. The basin plan is a key regulatory document that outlines water quality objectives, beneficial uses of water bodies, and the specific policies needed to achieve and maintain water quality standards.

Division of Drinking Water

The Division of Drinking Water (DDW), a section of the SWRCB, manages and oversees public water systems, enforces drinking water laws, and promotes water system security. The DDW enforces the federal and state SDWAs and sets limits for water quality to ensure safe drinking water. The DDW also oversees water recycling projects such as Pure Water, permits water treatment, and reviews water quality data.

Department of Water Resources

In 1955, due to severe flooding and property damage in Northern and Central California, the Legislature created the DWR. The new department was tasked with planning, designing, constructing, and overseeing the nation's largest state-built, multi-benefit water conveyance system, the SWP. Today, DWR is responsible for the development and protection of the state's water resources, including setting the minimum standards for wells. DWR is also the primary technical assistance and oversight agency responsible for assessing and evaluating groundwater sustainability plans (GSPs) under the Sustainable Groundwater Management Act (SGMA; discussed below).

Acts of the California Legislature

Porter-Cologne Water Quality Control Act

In 1969, the Porter-Cologne Water Quality Control Act, Division 7 of the California Water Code (CWC), became the foundational law for water quality regulation in California. The Porter-Cologne Act established the SWRCB and nine Regional Boards to implement and enforce the CWA and state-adopted water quality control plans as described above.

Safe Drinking Water Act

California has been delegated the authority to implement the federal SDWA by the USEPA. The State of California also has a SDWA (Health and Safety Code Section 116270 *et seq.*) that is consistent with the federal SDWA. The SWRCB is the implementing agency for the federal and state SDWAs and has regulatory oversight of public water systems throughout the state. In addition, there are several agencies within the state that have a role in regulating public water systems, including their formation, design, construction, operation, and the rates they can charge customers. The Office of Environmental Health Hazard Assessment (OEHHA) provides health-based risk assessments for contaminants, which are used to develop primary drinking water standards. The DDW regulates public drinking water systems, enforcing both the federal and state SDWAs. Water system oversight includes conducting field inspections, issuing operating permits, reviewing plans for new facilities, taking enforcement actions for non-compliance, reviewing water quality data, and supporting water system security. For regulation in California, DDW has established its own set of MCLs based either on the federal MCLs or its own more stringent MCLs. For example, California has an MCL for perchlorate though there is no federal MCL for this contaminant.

The SDWA also protects the quality of groundwater drinking water sources through the underground injection control (UIC) program requirements. The SDWA requires the USEPA to develop minimum federal requirements for UIC programs and other safeguards to protect underground sources of drinking water from contamination by underground injection of fluids. The USEPA has developed UIC program requirements that are designed to be adopted by states, territories, and tribes. In California, the standards are enforced by the SWRCB. Any injection project planned in California must meet the SWRCB's Sources of Drinking Water Policy, which ensures protection of groundwater quality for drinking water supplies.

Surface Water

National Pollution Discharge Elimination System

As discussed in Section 5.8.2.1, Section 402 of the CWA requires that a discharge of any pollutant or combination of pollutants to waters of the U.S. be regulated by an NPDES permit. Management of the NPDES program in California has been delegated to the SWRCB. In California, NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the U.S and waters of the state. NPDES/WDR requirements that may apply to Pure Water are discussed below.

Waste Discharge Requirements

Waste discharge requirements may also be issued for discharges that may affect waters of the state that might not be otherwise covered by the CWA, or they can be issued together when both waters of the U.S. and waters of the state are involved (these are issued as a combined permit). All WDRs must implement the applicable basin plan for the region affected by the discharge. The following General WDRs require dischargers to comply with all applicable Basin Plan provisions, including any prohibitions and water quality objectives governing the discharge.

General Waste Discharge Requirements for Discharges from Drinking Water Systems to Surface Waters (SWRCB Order WQ. 2014-0194-DWQ, General Order No. CAG140001) provides regulatory coverage for short-term or seasonal planned and emergency (unplanned) discharges resulting from a water purveyor's essential operations and maintenance activities undertaken to comply with the federal SDWA, the California Health and Safety Code, and the SWRCB's DDW permitting requirements. This permit does not currently cover any type of purified or recycled water discharges; therefore, an Individual NPDES Permit from the Los Angeles Regional Board may need to be obtained for dewatering of purified or recycled water. To obtain coverage under this permit, a water purveyor must submit a Notice of Intent to the Los Angeles Regional Board, implement a monitoring and reporting program, and agree to notify the Los Angeles Regional Board and Municipal Separate Storm Sewer System (MS4) operator immediately of any unplanned or emergency discharges and describe the corrective measures taken. The Notice of Intent must also include information on the locations, frequency, and duration of planned discharges and must comply with standard provisions.

Construction General Permit

The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order No. 2022-0057-DWQ), otherwise referred to as the Construction General Permit or CGP, regulates discharges of pollutants in stormwater associated with construction activities. The SWRCB adopted the 2022 Construction Stormwater General Permit, Order 2022-0057-DWQ, on September 8, 2022, and it went into effect on September 1, 2023.

Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed during operation of facilities. Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the CGP. The CGP requires dischargers obtain permit coverage by submitting relevant documents, including a Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP). The SWPPP for the site must include identification of all pollutants, their sources, and control mechanisms, a description of BMPs implemented at the site to reduce or

eliminate stormwater pollution, a description of the site's spill and leak prevention and response plan, and the construction site monitoring program that describes methods and procedures for monitoring discharges in accordance with the CGP.

Industrial General Permit

CWA Section 402(p) requires certain types of industrial facilities that discharge stormwater into a storm drain system or to surface waters to obtain a NPDES permit. In California, these facilities may comply by seeking coverage under the state's General Permit for Stormwater Discharges Associated with Industrial Activities (SWRCB Order No. 2014-0057-DWQ, as amended), otherwise referred to as the Industrial General Permit or IGP. The IGP regulates stormwater discharges from any facility associated with 10 broad categories of industrial activities. The SWRCB and Regional Boards enforce the IGP. The IGP requires the implementation of various practices to achieve performance standards, as well as the development of a SWPPP and a monitoring plan. The SWPPP identifies the site-specific sources of pollutants and describes the BMPs that would be implemented at the facility to prevent unauthorized non-stormwater runoff and to reduce pollutants in stormwater discharges. As discussed more fully below, it is not clear at this juncture whether coverage under the IGP is required for any facilities or components at the Joint Treatment Site.

Industrial Wastewater Discharge Permit

Any business in the service area for the Sanitation Districts' Industrial Waste Pretreatment Program wanting to discharge industrial wastewater to the sanitary sewer must obtain an Industrial Wastewater Discharge Permit (IWDP), which is issued jointly by the local jurisdiction and the Sanitation Districts. Industrial wastewater is defined as all wastewater from any manufacturing, processing, institutional, commercial, or agricultural operation, or any operation where the wastewater discharged includes significant quantities of waste of non-human origin. The local jurisdiction must first approve the permit application package and then it is forwarded to the Sanitation Districts for review and approval. Stormwater discharges from industrial dischargers to the sanitary sewer are generally prohibited by the Sanitation Districts, unless approved by the Chief Engineer and General Manager.

Clean Water Act Sections 303(d) and 305(b)

The SWRCB is the California-designated agency for compliance with Sections 303(d) and 305(b) of the CWA. The SWRCB prepares the 305(b) Integrated Report which is a comprehensive review of water quality for surface water bodies. In addition, the SWRCB assigns a priority for development of TMDLs, which is the calculation of the maximum amount of a pollutant allowed to enter a surface waterbody so that the waterbody will meet and continue to meet WQS for identified pollutants of concern.

Groundwater

Sustainable Groundwater Management Act

The SGMA was passed in 2014 and established a statewide framework to help protect groundwater resources. SGMA requires existing local agencies to form groundwater sustainability agencies in high and medium priority basins, develop and implement GSPs, and achieve long-term sustainable management of their groundwater basins.

DWR is the primary technical assistance and oversight agency responsible for assessing and evaluating the GSPs for compliance with SGMA. DWR assigned each groundwater basin a priority ranking: high, medium, low, or very low, and designated 21 high-priority basins as critically overdrafted. Groundwater sustainability agencies were required to adopt GSPs for critically overdrafted basins by 2020 and for high and medium priority basins by 2022. GSPs are encouraged but not required for low and very low-priority basins. SGMA also specifically exempts certain adjudicated basins, except for annual reporting requirements. The Central Basin, Main San Gabriel Basin, and West Coast Basin, which would be replenished by Pure Water, are adjudicated basins that are largely exempt from SGMA requirements.

California Water Code and Health and Safety Code

The CWC, enacted in 1943, and the Health and Safety Code, established in 1939, include a variety of California laws that regulate the use of water, recycled water, and the protection of water quality, which are applicable to all types of potable reuse projects, including groundwater recharge projects that use recycled water. A new law adopted in 2010 and updated in 2017 resulted in the promulgation of regulations by DDW for IPR (including groundwater recharge and reservoir or surface water augmentation), as well as for raw water augmentation and treated water augmentation, which are often referred to as DPR.

Health and Safety Code Section 116456 provides the SWRCB with the authority to establish and revise notification levels and response levels for contaminants in drinking water delivered for human consumption before an MCL has been set. Notification levels are health-based advisory levels established by the OEHHA that the SWRCB adopts for chemicals in drinking water that lack MCLs.

Title 22

Title 22 (Division 4 Environmental Health, Chapter 3) of the CCR refers to state guidelines for how treated recycled water is used for non-potable uses, IPR (including both groundwater recharge and surface water augmentation), and DPR. The objective of Title 22 standards is to protect public health from pathogens and other contaminants that may be present in recycled water. The groundwater replenishment regulations in Title 22 specify compliance with recycled water quality requirements, including controls for microbial pathogens, compliance with drinking water standards for regulated chemicals, and controls for nitrogen and unregulated chemicals. The SWRCB governs the permitting of recycled water projects, develops uniform water recycling criteria, and reviews and approves engineering reports prepared in compliance with Title 22 prior to being permitted by the applicable Regional Board for the production, distribution, or use of recycled water. A portion of the Indirect Potable Reuse: Surface Water Augmentation regulations is contained in Title 22, Division 4, Chapter 17, Article 9. The DPR regulations are contained in Title 22, Division 4, Chapter 17, Article 10.

Water Reclamation Requirements for Recycled Water

This 2016 SWRCB-adopted order establishes standard conditions for non-potable recycled water use and conditionally delegates authority to an administrator to manage a Water Recycling Program and issue Water Recycling Permits to recycled water users *(Water Reclamation Requirements for Recycled Water Use (SWRCB Order No. 2016-0068-DDW)*). This General Order permits non-potable reuse of treated municipal wastewater. Non-potable uses that may be permitted include landscape irrigation, crop irrigation, dust control, industrial/commercial cooling, decorative fountains, etc. In some cases, the Regional Board may require separate WDRs/Water Reclamation Requirements for new non-potable reuse programs. Order No. 2016-0068-DDW does not cover IPR or DPR uses, which are addressed by

Title 22, Division 4, Chapter 17 and the Recycled Water Policy (discussed below). IPR and DPR projects are not covered by a General Order and must obtain project-specific permits.

Recycled Water Policy

The purpose of the Recycled Water Policy is to encourage the safe use of recycled water from wastewater sources and increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The SWRCB adopted the Recycled Water Policy (Resolution No. 2009-0011) on February 3, 2009, and amended it in 2013 and 2018 to update statewide water recycling goals and address monitoring of Constituents of Emerging Concern (CECs) for groundwater replenishment projects, among other changes. The policy provides direction to the Regional Boards, proponents of recycled water projects, and the public regarding the methodology and appropriate criteria for the SWRCB and the Regional Boards to use when issuing permits for recycled water projects.

The critical provisions in the Recycled Water Policy related to groundwater replenishment projects are described in the following subsections.

Regional Board Groundwater Objectives

Each Regional Board creates a region-specific water quality control plan, or basin plan, which allows Regional Boards to include additional or more stringent requirements for groundwater replenishment projects in consultation with DDW and based on the water quality objectives in the applicable Regional Board's basin plan.

Constituents of Emerging Concern

All operating IPR facilities must monitor for CECs pursuant to Attachment A (Monitoring Requirement for Constituents of Emerging Concern in Recycled Water used for Groundwater Recharge and Reservoir Water Augmentation) of the Recycled Water Policy. The CEC monitoring program was developed in accordance with recommendations from the 2018 Science Advisory Panel on CECs in Recycled Water.

CECs encompass any physical, chemical, biological, or radiological substance that may pose a risk to human and/or ecological health, for which there is not currently a published enforceable state or federal environmental or health standard; the existing standard is evolving or being re-evaluated; and/or the presence, frequency of occurrence, source, fate and transport, and/or toxicology of which is not well understood, routinely monitored, and/or may lack standard analytical methods (SWRCB 2025). The Recycled Water Policy defines CECs as constituents in personal care products; pharmaceuticals; antimicrobials; industrial, agricultural, and household chemicals; naturally occurring hormones; food additives; transformation products; inorganic constituents; microplastics; and nanomaterials (SWRCB 2018). Since many CECs do not have established drinking water standards or advisory levels, a method to estimate concentrations that can be ingested daily over a lifetime without appreciable risk has been accepted as standard practice for CECs (Nellor 2015).

California IPR regulations require monitoring for CECs. The Recycled Water Policy and related regulations include provisions for the Regional Boards, SWRCB's Division of Water Quality, and DDW to evaluate data and clarify which constituents a project must monitor. Specific CECs that require regular monitoring include health-based CECs (i.e., CECs that have toxicological relevance to human health) that have been assigned notification levels (e.g., 1,4-dioxane, N-nitrosodimethylamine, perfluorooctane

sulfonate [PFOS], perfluorooctanoic acid [PFOA]), as well as n-nitrosomorpholine (NMOR), which does not have an assigned notification level, and performance indicator CECs (i.e., CECs that do not have human health relevance but can be used to monitor the efficacy of recycled water treatment processes; gemfibrozil, iohexol, sucralose, sulfamethoxazole) (SWRCB 2018). CEC lists are updated for each monitoring effort based on scientific research, priorities, and anticipated water use (e.g., IPR, DPR, discharge to surface water).

Anti-degradation Policies

To ensure a project does not degrade water quality within a basin, the proponent of a groundwater recharge project must submit an anti-degradation analysis to the applicable Regional Board to demonstrate compliance with the Anti-degradation Policy.

The SWRCB's anti-degradation policies were developed to protect existing and potential beneficial uses of surface water and groundwater and are incorporated into Regional Board basin plans.

- *Resolution 68-16, Policy with Respect to Maintaining Higher Quality Waters in California (1968 Anti-degradation Policy).* The Anti-degradation Policy requires that existing high-water quality be maintained to the maximum extent possible but allows lowering of water quality if the change is "consistent with maximum benefit to the people of the State or will not unreasonably affect present and anticipated beneficial use of such water." The Anti-degradation Policy requires best practicable treatment or control of discharges to high-quality waters to ensure that pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of California is maintained. Assimilative capacity is the ability of an environment to absorb pollutants or waste materials without causing substantial water quality degradation. Regarding groundwater, assimilative capacity is the groundwater's capacity to assimilate contaminants without detrimental effects to human health or other beneficial uses. Basin plan objectives, outlined in each basin plan, determine the level at which detrimental effects could occur. The existing groundwater quality is known as the ambient groundwater quality. The difference between ambient groundwater quality and a basin's water quality objectives is the available assimilative capacity which varies for each basin depending on groundwater quality.

- *Resolution 88-63, Sources of Drinking Water (1988).* This resolution states that all surface and ground waters of the state are suitable, or potentially suitable, for municipal or domestic water supply, except for waters whose existing water quantity or quality are not suitable for drinking water. The policy also protects beneficial uses of municipal and domestic water supply wherever they are being attained and is a complement to the 1968 Anti-degradation Policy.

5.8.2.3 Regional

Basin Plans

The Regional Boards carry out implementation of the CWA and Porter-Cologne Act at the local level, including issuance (and enforcement) of NPDES permits and other WDRs. The Regional Boards develop water quality objectives and implement plans that will best protect the beneficial uses of the state's waters, including both surface and groundwater, recognizing local differences in climate, topography, geology, and hydrology. Each Regional Board is responsible for water quality decisions for its region, which includes setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions. The Regional Boards adopt basin

plans, or water quality control plans, which preserve and enhance water quality and protect the beneficial uses of all regional waters. Basin plans also incorporate (by reference) all applicable State and Regional Board plans and policies, as well as other pertinent water quality policies and regulations.

Water quality objectives set by the Regional Boards in the basin plans are intended to) protect the public health and welfare and to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. Specifically, the basin plan: (1) identifies beneficial uses for surface and ground waters; (2) includes the narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy; and (3) describes implementation programs and other actions that are necessary to achieve the water quality objectives established in the Basin Plan.

Beneficial uses have been established for both surface waters and groundwater basins in the basin plans. For the purposes of water quality standards, a beneficial use is one of the various ways that water can be used for the benefit of people and/or the environment. Examples include municipal/domestic water supply, recreation, industrial and agricultural water supply, the support of fresh and saline aquatic habitats, groundwater recharge, navigation, and commercial or sport fishing. The Los Angeles Regional Board has jurisdiction over the coastal drainages between Rincon Point (on the coast of western Ventura County) and the eastern Los Angeles County line. Region-specific water quality regulations are contained in the Los Angeles Regional Board's *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan; Los Angeles Regional Water Quality Control Board 2014). The West Coast, Central, and Main San Gabriel basins are all under the jurisdiction of the Los Angeles Regional Board Basin Plan.

Many groundwater basins in the Basin Plan, including the West Coast Basin, Central Basin, and Main San Gabriel Basin, are designated for Municipal and Domestic Water Supply, which reflects the importance of groundwater as a source of drinking water and as required by the SWRCB's Sources of Drinking Water Policy, which ensures the protection of groundwater quality. Other beneficial uses for groundwater in these three basins are Industrial Service Supply, Industrial Process Supply, and Agricultural Supply.

Water Quality Objectives

The Basin Plan includes water quality objectives for both surface water drainage areas and groundwater basins. The water quality objectives for surface waters and groundwater basins include but are not limited to, TDS, sulfate, chloride, boron, and nitrogen, with objectives for each constituent varying by reach or basin. Basin Plan objectives for groundwater basins are set to ensure that groundwater does not contain concentrations of chemicals in amounts that adversely affect beneficial uses or degrade water quality. The objectives include general narrative objectives that apply to all groundwaters for taste, odor, and radioactivity; groundwater criteria for bacteria and California's primary and secondary MCLs; and objectives to protect soil productivity, irrigation, and livestock watering (where applicable). Moreover, recharge of supplemental water sources introduced into the groundwater basin, including imported water and recycled water, must not cause Basin Plan objectives to be exceeded.

Salt and Nutrient Management Plans

The state's Recycled Water Policy recognizes the potential for increased salt and nutrient loading to groundwater basins because of increased recycled water use and, therefore, requires the development of regional or sub-regional salt and nutrient management plans (SNMPs). The intent of the SNMP requirement is for salts and nutrients from all sources to be managed on a basin-wide or watershed-wide basis in a manner that ensures the attainment of water quality objectives and protection of

beneficial uses. Salt and nutrient sources include natural soils, discharges of waste, irrigation using surface water, groundwater, or recycled water, and water supply augmentation using surface or recycled water. The SNMP includes implementation measures to manage salt and nutrient loadings in a basin on a sustainable basis, as well as an anti-degradation analysis that demonstrates that all recycling projects identified in the plan will collectively protect groundwater quality. The SNMP also includes a monitoring network designed to determine if salts, nutrients, and other constituents of concern (as identified in the SNMPs) are consistent with applicable water quality objectives.

An SNMP has been developed for the Central Basin and West Coast Basin (WRD 2015), and a separate SNMP has been developed for the Main San Gabriel Basin (Main San Gabriel Watermaster 2016). The SNMP analysis indicates that average TDS and chloride concentrations in the Central Basin are below Basin Plan objectives and that assimilative capacity is available. Due to saline plumes in the West Coast Basin (refer to Section 5.8.1.2), average TDS and chloride concentrations exceed Basin Plan objectives and, as a result, there is no available assimilative capacity for TDS and chloride in this basin.

Ocean Plan

The *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan; SWRCB and CalEPA 2019) governs surface water discharges to the Pacific Ocean off the California coast and sets water quality standards as well as contains language prescribing the preservation of marine and human health. The Ocean Plan is one of five statewide water quality control plans established by the SWRCB to preserve and enhance California's territorial oceans. All five plans include provisions unique to their geographic jurisdiction. The plan was adopted by the SWRCB on July 6, 1972, and has been amended most recently in 2019. The amendment to the Ocean Plan addressed new bacteria water quality objectives and implementation provisions to protect recreational users from the effects of pathogens in ocean waters of California. Water quality objectives for ocean waters off the coast of California are established in the Ocean Plan, including numeric criteria that are protective of marine aquatic life and human health which provides the basis with which the state and regional water boards set NPDES permits for ocean discharge of wastewater. This plan designates beneficial uses and water quality goals and includes programs to achieve these objectives by controlling the discharge of waste into the ocean. Discharge of waste can include stormwater runoff, municipally treated wastewater, and other discharges by industrial users. The Ocean Plan also sets effluent limitations and water quality objectives on contaminants to be monitored in order to stay within natural background levels of seawater and not exceed those mass levels found in effluent. These limitations require that effluent discharges must preserve the physical, chemical, and biological quality of the marine environment. Wastewater discharges must not degrade the physical and chemical characteristics of the marine environment, impair biological communities, or impact the safety of seafood.

National Pollution Discharge Elimination System

Waste Discharge Requirements

On September 13, 2018, the Los Angeles Regional Board adopted *General NPDES Permit No. CAG994004 Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties, Order No. R4-2018-0125, NPDES Permit No. CAG994004*. This order is intended to authorize discharges of treated or untreated groundwater generated from permanent or temporary dewatering operations or other applicable wastewater discharges not specifically covered in other general or individual NPDES permits. Discharges from facilities to waters of the U.S. that do not cause, have the reasonable potential to

cause, or contribute to an in-stream excursion above any applicable state or federal water quality objectives or cause acute or chronic toxicity in the receiving water are authorized discharges in accordance with the conditions set forth in this order.

On July 23, 2021, the Los Angeles Regional Board issued *Waste Discharge Requirements and NPDES Permit for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties, Order No. R4-2021-0105, NPDES Permit No. CAS004004* (2021 Phase I MS4 Permit) to the 85 incorporated cities and the unincorporated areas within Los Angeles County, LACFCD, Ventura County Watershed Protection District, Ventura County, and 10 incorporated cities within Ventura County.

Commercial, Industrial, and Institutional Permit

The USEPA can use its "residual designation" authority under 40 CFR 122.26(a)(9)(i)(C) and (D) to require NPDES permits for other stormwater discharges or category of discharges, on a case-by-case basis, if those discharges are not covered by another type of permit. The Los Angeles Regional Board and USEPA are considering potential regulatory requirements for stormwater runoff from certain commercial, industrial, and institutional) facilities in the Dominguez Channel/Greater Los Angeles and Long Beach Harbor Watershed and the Los Cerritos Channel/Alamitos Bay Watershed to reduce pollutant levels in stormwater runoff that flows from these facilities. These waterbodies are currently not attaining water quality standards for numerous chemicals, including copper and zinc, which can harm aquatic life, ecosystems, and human health. In order to address the water quality issues in these two watersheds, USEPA is considering requiring certain commercial, industrial, and institutional facilities in these watersheds to obtain NPDES permit coverage for stormwater discharges.

5.8.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to hydrology and water quality. Pure Water would have a significant impact if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;

2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would result in substantial erosion or siltation onsite or offsite; substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows;

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

5.8.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

HAZ-EC-1 **Hazardous Materials Business Plan and Spill Prevention, Control, and Countermeasure Plan.** Metropolitan shall prepare a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of California Health and Safety Code, Division 20, Chapter 6.95 for operation of facilities that use and store potentially hazardous chemicals. The HMBP shall include an inventory of hazardous materials stored on site, storage and containment methods, an emergency response plan, and an employee training program. The HMBP shall be submitted to the appropriate unified program agency for review and approval. In addition, a Spill Prevention, Control, and Countermeasure (SPCC) Plan will be required if any sites will store more than a total of 1,320 gallons of petroleum in aboveground containers, with containers having a storage capacity of at least 55 gallons, in accordance with the requirements of the Aboveground Petroleum Storage Act.

HAZ-EC-2 **Site-Specific Safety Plan.** Metropolitan or its contractors shall prepare a Site-Specific Safety Plan (SSSP) addressing the potential for discovery of unidentified underground storage tanks, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction and demolition activities. The SSSP shall also address underground storage tank decommissioning, field screening and materials testing methods, contaminant management requirements, and health and safety requirements in compliance with applicable U.S. Environmental Protection Agency (USEPA), Los Angeles Regional Water Quality Control Board (Los Angeles Regional Board), Department of Toxic Substances Control (DTSC), and local guidelines. The SSSP shall be prepared prior to the start of work and shall be implemented during all construction activities. All hazardous or solid wastes and debris encountered or generated during construction and demolition activities shall be handled in accordance with the SSSP all applicable federal, state, and local laws and regulations.

HAZ-EC-3 **Hazardous Materials Management Plan.** The SSSP described in HAZ-EC-2 shall include a Hazardous Materials Management Plan for appropriate handling of potentially contaminated soil to be implemented during all phases of construction. Workers shall be trained to identify and recognize potentially hazardous materials (e.g., visual evidence of staining or discoloration). If hazardous materials are found or an unknown material is encountered that could potentially be hazardous, the Contractor shall stop work on the area immediately and notify appropriate safety representatives. Furthermore, excavated soil within the vicinity of properties identified as Recognized Environmental Conditions and Controlled Recognized Environmental Condition in this report shall be monitored (i.e., utilizing a four-gas meter)in accordance with South Coast Air Quality Management District (SCAQMD) Rules 1166 and 1466 related to soils contaminated with volatile organic compounds or toxic contaminants, and for explosiveness and other gases typically monitored for during excavations.

If the monitoring procedures indicate that soil is potentially contaminated, the SSSP shall be implemented and shall include procedures for segregation, sampling, and chemical analysis of the soil. These procedures shall follow USEPA and DTSC regulations for handling contaminated soil as well as the Los Angeles Regional Board-approved Soil Management Plan for the former Fletcher Oil and Refining Company site within the Joint Treatment Site. As required by regulations in place at the time of construction, contaminated soil shall be profiled for disposal and shall be transported to an appropriate hazardous or non-hazardous waste or recycling facility licensed to accept and treat the type of waste indicated by the profiling process. If these processes generate contaminated groundwater that must be disposed of outside of the dewatering/National Pollution Discharge Elimination System process, the groundwater shall be profiled, manifested, hauled, and disposed of in accordance with USEPA and Los Angeles Regional Board regulations in place at the time of construction.

HYD-EC-1 **Construction General Permit Storm Water Pollution Prevention Plan.** The contractor shall obtain coverage under the Construction General Permit (CGP) and comply with its conditions, including preparation and implementation of site-specific Stormwater Pollution Prevention Plans (SWPPPs) in accordance with the requirements of the State Water Resources Control Board (SWRCB), CGP, and Construction BMP [Best Management Practices] Online Handbook developed by California Storm Water Quality Association (CASQA). These SWPPPs shall identify BMPs to eliminate/reduce non-storm water discharges to storm systems and other waters of the U.S., prevent construction pollutants from contacting storm water, limit erosion and sediment transport, and manage erosion and pollutants onsite.

HYD-EC-2 **Industrial General Permit Storm Water Pollution Prevention Plan.** If required, Metropolitan shall obtain coverage under the Industrial General Permit (IGP) for the Advanced Water Purification (AWP) Facility and comply with its conditions, including preparation and implementation of a site-specific industrial SWPPP. This SWPPP would identify the specific sources of pollutants associated with the AWP Facility, if any, and describe those BMPs that would be implemented to prevent unauthorized non-stormwater runoff. If required, this SWPPP also would: (1) establish action levels and effluent limitations for any non-stormwater discharges occurring at the AWP Facility; (2) identify response actions to be taken if such levels and limitations are exceeded; and (3) impose certain monitoring and reporting requirements.

5.8.5 Impact Analysis

5.8.5.1 Topic 1: Water Quality and Sustainable Groundwater Management

Would Pure Water violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Would Pure Water conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Program-Level Analysis

Surface Water

Construction

Construction of the Pure Water facilities and components would have the potential to result in erosion of soils or disturbances of surface waters during ground-disturbing activities, which could affect surface water quality. During heavy rain events, stormwater that passes through construction sites may carry pollutants into local stormwater collection systems and downstream receiving waters or directly into an adjacent natural drainage or receiving waters, negatively impacting water quality. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion, sedimentation, and transport of pollutants. Compliance with the CGP, NPDES, and other relevant regulatory requirements would be regularly monitored through site inspections and reporting to ensure that construction activities do not violate water quality standards. Metropolitan would work closely with regulatory agencies to ensure that permits are up to date and that BMPs are functioning as intended. Through implementation of such measures, impacts associated with surface water quality during construction would be **less than significant**.

Operation

Upon completion of construction, disturbed areas associated with belowground components (e.g., pipelines and valves) would be restored to pre-existing conditions, including hardscaping, landscaping, or asphalt, and the permanent aboveground components (e.g., treatment facilities and pump stations) would be developed primarily with impervious surfaces. Appropriate stormwater BMPs would be installed as applicable and in compliance with the CGP; therefore, erosion and sedimentation would not occur in a manner that would cause or contribute to water quality standard violations. Operation of the permanent aboveground components would involve the use of potential pollutants, including chemicals for treatment processes, chlorine at the pump stations, and typical maintenance equipment-related materials, such as petroleum products and automotive fluids. Such pollutants, if accidentally released, could accumulate on impervious surfaces at the sites and be transported to downstream receiving waters in a storm event. However, in accordance with **HAZ-EC-1**, Metropolitan would prepare and implement an HMBP to handle and store potentially hazardous materials. In addition, through compliance with applicable permits, stormwater generated at these sites would be managed in accordance with regulatory standards such that the facilities would not result in downstream water quality impacts. Compliance with relevant regulatory requirements, including applicable permits, would be regularly monitored through site inspections and reporting to ensure that operational activities do not violate water quality standards. Metropolitan would work closely with

regulatory agencies to ensure that permits are up to date and that BMPs are functioning as intended. Operational impacts associated with surface water quality would therefore be **less than significant**.

Groundwater

Construction

If surface water were to be polluted by Pure Water's construction activities, the affected water could then infiltrate into the groundwater table. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion, sedimentation, and transport of pollutants to surface waters, which would in turn minimize the potential for pollutants to affect groundwater. Similarly, **HAZ-EC-2** and **HAZ-EC-3** would ensure proper management of potential hazardous material pollutants and contaminants during construction, which would protect groundwater and surface water. Through implementation of such measures, impacts associated with groundwater quality impacts during construction would be **less than significant**.

Operation

Water Quality

Pure Water would recharge the West Coast, Central, and Main San Gabriel basins and the water would be extracted for potable and non-potable beneficial uses. These groundwater basins are subject to water quality objectives outlined in the Basin Plan. The SNMP for the basin defines the limits for salts and nutrients.

Data from the NIC were used to analyze Pure Water's consistency with the SNMP and Basin Plan for the Central, West Coast, and Main San Gabriel basins and develop a preliminary anti-degradation analysis. Constituents of concern for the analysis were selected based on (1) SNMP goals and (2) constituents that potentially exceed ambient conditions based on data from the NIC. The selected constituents of concern include TDS, sulfate, chloride, boron, nitrate, 1,4-dioxane, hexavalent chromium, and total trihalomethanes. In each subject basin, the constituents of concern are currently below the applicable regulatory threshold.

As previously noted under Section 5.8.2.2, the state's Recycled Water Policy establishes that the difference between existing (referred to as ambient) groundwater quality and a basin's water quality objectives for TDS, sulfate, chloride, nitrate, and boron and the identified constituents of concern as outlined in the basin plan is considered to be the available assimilative capacity, which is the basin's capacity to assimilate contaminants without detrimental effects to human health or other beneficial uses. If a proposed groundwater recharge project, such as Pure Water, would use less than 10 percent of the available assimilative capacity of a basin for at least 10 years, the increase in concentration of identified pollutants is considered an immaterial impact as defined by the Recycled Water Policy. If multiple groundwater recharge projects in a single basin use a combined total of less than 20 percent of the assimilative capacity, the increase in concentration of identified pollutants is also considered an immaterial impact and consistent with the Recycled Water Policy. If a project would use more than 10 percent of the assimilative capacity for a constituent of concern in a groundwater basin, a more detailed anti-degradation analysis would be required in the engineering report in order to obtain a Title 22 recycled water permit from the Los Angeles Regional Board. If such an analysis is conducted and accepted, the Regional Board may allow a project to use more than 10 percent of the available assimilative capacity.

The Anti-degradation Policy allows lowering of water quality if the change is "consistent with maximum benefit to the people of the State or will not unreasonably affect present and anticipated beneficial use of such water." The impacts of water quality changes that use more than 10 percent of the assimilative capacity of a basin for a constituent of concern would be considered less than significant if:

- The water quality changes will not result in water quality less than prescribed in the Basin Plan;
- The water quality changes will not unreasonably affect present and anticipated beneficial uses;
- The water quality changes are consistent with the maximum benefit to the people of the state; and
- The program is consistent with the use of best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the state.

West Coast and Central Basins

In the West Coast Basin and Central Basin, Pure Water would use less than 10 percent of the available assimilative capacity for the 8 constituents of concern (TDS, sulfate, chloride, boron, nitrate, 1,4-dioxane, hexavalent chromium, and total trihalomethanes). Based on the Recycled Water Policy, use of 10 percent or less of the total available assimilative capacity is considered less than significant. For several constituents, Pure Water would reduce the concentration compared to what currently occurs in these basins. For West Coast Basin, Pure Water would reduce concentrations of TDS, sulfate, chloride, and 1,4-dioxane and for Central Basin, Pure Water would reduce concentrations of TDS, sulfate, chloride, hexavalent chromium, and 1,4-dioxane.

Main San Gabriel Basin

In the Main San Gabriel Basin, Pure Water would use less than 10 percent of the available assimilative capacity for the 8 constituents of concern (TDS, sulfate, chloride, boron, nitrate, hexavalent chromium, 1,4-dioxane, and total trihalomethanes) and associated impacts related to those constituents would be considered less than significant. Similar to the West Coast and Central basins, Pure Water would reduce the concentration of TDS, sulfate, chloride, and nitrate relative to what currently occurs in the Main San Gabriel Basin.

The potential for groundwater recharge to affect existing contaminant plumes in the Main San Gabriel Basin also was modeled. The modeling results indicate that the contamination associated with the San Gabriel Valley Superfund Site in the Baldwin Park Operating Unit may be partially affected by additional recharge at the Santa Fe Spreading Grounds, particularly in the western portion of the remediation area. Although a slight increase in the areal extent of the plume may occur, the impacts appear to be minor and can be contained by ongoing remediation operations (Stetson Engineers Inc. 2018).

As a result, Pure Water would be considered consistent with the Recycled Water Policy criteria for the following reasons:

- *The water quality changes would not result in water quality less than prescribed in the Basin Plan*.

  In the West Coast Basin, Central Basin, and Main San Gabriel Basin, Pure Water would utilize less than 10 percent of the available assimilative capacity for all constituents of concern over the 10-year modeling horizon, and constituents of concern concentrations in the groundwater would not exceed the limits prescribed in the Basin Plan.

- *The water quality changes would not unreasonably affect present and anticipated beneficial uses.*

  Because Pure Water would use less than 10 percent of the assimilative capacity after 10 years, it is not expected to unreasonably affect present or anticipated beneficial uses.

- *The water quality changes would be consistent with the maximum benefit to the people of the state.*

  Pure Water would play an important role in Metropolitan's future. Recycled water is considered a valuable resource and is suitable for various beneficial uses. Implementation of Pure Water would increase the water supply available in the Metropolitan service area and, therefore, reduce reliance on imported water supplies. Recycled water is a much-needed sustainable, reliable, and climate-resilient water supply option for the region. Among other benefits as described in Section 3.2, Pure Water would reduce the potential loss of groundwater production capabilities from the continuation of declining water levels and would assist the state in reaching its recycled water development goals. Therefore, Pure Water would provide the maximum benefit to the people of the state.

- *Pure Water would be consistent with the use of best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the state.*

  Per CWC Section 13050(l)(1), "pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either the waters for beneficial uses or facilities that serve these beneficial uses. As described above, implementation of Pure Water would not cause an exceedance of the Basin Plan objectives for each basin and, therefore, would not unreasonably affect any beneficial uses. As detailed in Section 4.2.1, Metropolitan proposes a robust treatment process for groundwater recharge that would meet applicable regulations and would implement safeguards to protect water quality.

  In addition to the Recycled Water Policy and the Anti-degradation Policy, the Title 22 permit from the Los Angeles Regional Board would establish limits for each constituent specifically for Pure Water. Metropolitan would coordinate with its member agencies and the Sanitation Districts, as applicable, to employ all measures determined necessary to meet the requirements for issuance of and compliance with the Title 22 permit.

Based on compliance with the extensive regulatory requirements as described above, Pure Water would not violate any water quality standards or waste discharge requirements, conflict with or obstruct implementation of a water quality control plan, or otherwise substantially degrade groundwater quality. Impacts to groundwater quality would be **less than significant**.

Sustainable Groundwater Management Plan

Each of the groundwater basins that would receive supplies from Pure Water is adjudicated and, therefore, not subject to groundwater sustainability planning requirements under the SGMA. Therefore, Pure Water would not conflict with or obstruct implementation of a sustainable groundwater management plan, and **no impact** would occur.

Outfall Discharge

The Warren Facility currently provides primary and secondary wastewater treatment for an average flow of approximately 250 MGD. After treatment at the Warren Facility, the secondary effluent is discharged to the ocean through a network of tunnels and outfall pipes (outfall system) that extend two miles offshore and 200 feet deep into the Pacific Ocean at White Point off the Palos Verdes Peninsula (**Figure 5.8-4)**. Discharge of this secondary effluent is permitted under the Warren Facility's NPDES permit issued by the Los Angeles Regional Board (Order No. R4-2023-0181) which specifies discharge prohibitions and specifications, effluent limitations, performance goals, receiving water limitations, and monitoring and reporting requirements. Surface water discharges to the Pacific Ocean off the California coast are governed by the California Ocean Plan. The Ocean Plan sets both numeric and narrative water quality criteria to protect aquatic life and human health, and along with the federal CWA, provides the basis for NPDES permits issued by state and Regional Boards for ocean discharge.

The Warren Facility NDPES permit sets numeric effluent limitations, largely based on water quality objectives in the Ocean Plan, on parameters to be monitored. Due to high levels of dilution with seawater and rapid mixing at the ocean outfall, a dilution ratio of 166:1 (seawater to effluent) is used in the NPDES permit to calculate effluent limitations to achieve water quality objectives once the effluent leaves the outfall and is mixed with ocean water. In addition to numeric effluent limitations, the Warren Facility NPDES permit also contains a number of qualitative receiving water limitations based on standards established in the Ocean Plan. These limitations require the preservation of the physical, chemical, and biological quality of the marine environment. Effluent discharges must not degrade the physical and chemical characteristics of the marine environment, impair biological communities, or impact the safety of seafood. To assess compliance with these standards, the Sanitation Districts employ an extensive ocean monitoring program that includes water quality and sediment assessments, fish and invertebrate monitoring, fish tissue and benthic surveys, and other monitoring programs. Also, in accordance with the Warren Facility NPDES permit, the Sanitation Districts have an industrial wastewater pretreatment program that is approved by the EPA and the Los Angeles Regional Board. The pretreatment program allows the Sanitation Districts to implement an industrial waste permitting, monitoring, and enforcement program. Source control is an integral part of the pretreatment program and is established to protect the wastewater collection system and ensure the quality of cleaned wastewater discharged to the ocean from the Warren Facility.

Pure Water would purify cleaned wastewater (secondary effluent) from the Warren Facility using RO membrane filtration. This process would produce up to 26 MGD of RO concentrate, which would be blended with the secondary effluent from the Warren Facility and discharged to the ocean via the outfall. As part of demonstration testing at the NIC facility, the Sanitation Districts have conducted

assessments addressing compliance of planned ocean disposal of RO concentrate from Pure Water via the Warren Facility outfall. A technical memorandum describing findings from testing completed in 2020 and 2021 was prepared, titled *Pure Water Southern California RO Concentrate Ocean Discharge Compliance Assessment* (Sanitation Districts 2022), and ongoing testing in subsequent years at a similar level of effort has resulted in similar findings. The analysis considered monitoring results of RO concentrate from the NIC, evaluated certain CECs, and assessed potential impacts to marine life. The memo concluded that the proposed RO concentrate ocean disposal would meet current regulatory requirements and is not expected to generate concerns for water quality.

Since the NIC started operation in 2019, as part of demonstration testing, the Sanitation Districts have conducted multiple rounds of extensive testing of the RO concentrate produced by the NIC to assess water quality with respect to ocean discharge requirements, as described below. Testing included sampling of the RO concentrate produced by the NIC as well as Warren Facility secondary effluent so that blended concentrations representative of the proposed discharge through the Warren Facility outfall could be analyzed. When applicable, results were evaluated against limits and objectives considering the 166:1 dilution ratio consistent with the current permit. It should be noted that the Sanitation Districts have conducted additional modeling to characterize outfall mixing and dilution under future discharge scenarios involving combined RO concentrate and secondary effluent. This modeling considered changes to flows and water quality characteristics (such as density) resulting from Pure Water. Results of this modeling confirmed that the current Warren Facility dilution ratios are appropriate and conservative for evaluating the Pure Water Program. The following parameters were used in the testing.

- **Chemistry:** Testing included monitoring for over 100 chemical compounds including metals, organic compounds, nutrients, salts, and performance parameters for wastewater treatment such as biochemical oxygen demand and total suspended solids. These parameters have effluent limitations identified in the Warren Facility NPDES permit to protect the quality of the receiving water, or are otherwise required to be monitored by the permit. All results met applicable permit limits and dilution-adjusted Ocean Plan objectives. This monitoring also included evaluation of DDTs and PCBs concentrations in accordance with the *Santa Monica Bay Total Maximum Daily Loads (TMDL) for DDTs and PCBs* (USEPA 2012), and results were found to be below applicable wasteload allocations for the Warren Facility.

- **Microbiology:** To evaluate compliance with the Warren Facility NPDES permit and Ocean Plan receiving water microbiology objectives, and to determine if the RO concentrate would require disinfection prior to ocean discharge, testing for select indicator microorganisms (i.e., total/fecal coliform bacteria, Enterococcus spp., and male-specific coliphage) and pathogens (i.e., Giardia, Cryptosporidium, and culturable enteric viruses) was also performed during demonstration testing. All microbiological parameter results for the RO concentrate consistently met applicable limits and objectives. Therefore, disinfection of RO concentrate would not be required.

- **Toxicity:** To evaluate compliance with the Warren Facility NPDES permit and Ocean Plan toxicity objectives, acute and chronic toxicity testing was performed on mixtures of the RO concentrate and Warren Facility secondary effluent consistent with expected discharge ratios. These ratios were based on Pure Water's total capacity of 150 MGD and corresponding estimated RO concentrate and remaining secondary effluent flows that would be combined for discharge to the Warren Facility's ocean outfall system. Toxicity testing results showed that the discharge of RO concentrate with Warren Facility secondary effluent at the outfall would be non-toxic and

not expected to cause harm to aquatic life. Toxicity limits in the current NPDES permit would be consistently met, considering blending with Warren Facility secondary effluent and dilution of the discharge.

In addition to the regulated parameters described above, CECs were also monitored in the RO concentrate during demonstration testing for tracking purposes and to generate data that could be used to evaluate compliance with potential future regulatory requirements for these chemicals. CECs include a wide variety of organic chemicals which are generally not currently regulated. CECs include substances such as pharmaceuticals, pesticides, commercial products, and flame retardants. Many of these chemicals were previously not detectable by available analytical methods; however, recent advances in technology have allowed detection at low levels in wastewater. This has led to efforts to investigate potential impacts to human and environmental health from these chemicals.

Monitoring of CECs in the NIC RO concentrate was based on the Sanitation Districts' existing CEC monitoring program. The Sanitation Districts voluntarily monitor CECs on a regular basis in the influent and effluent to and from its wastewater treatment facilities. This monitoring program began in 2007 and has expanded over time based on published recommendations by a science advisory panel convened by the SWRCB to develop CEC monitoring recommendations, including monitoring specific to discharges to aquatic ecosystems (Drewes et al. 2023; Anderson et al. 2012; Drewes et al. 2018). CEC monitoring in the RO concentrate also included a range of PFAS.

The EPA has established benchmarks for the protection of marine aquatic life for two PFAS compounds: PFOS and PFOA; RO concentrate monitoring results for PFOS and PFOA were significantly lower than these benchmarks. Other CEC parameters do not have established or proposed regulatory limits for the protection of the marine environment. The aforementioned science advisory panel reports for CECs in aquatic ecosystems do not establish definitive thresholds for risk to aquatic life, but do establish a framework for prioritization of CECs for monitoring, evaluation of results and trends, and triggers for additional monitoring and investigation. The Sanitation Districts will continue to conduct their voluntary CEC monitoring program and would incorporate monitoring of the blended RO concentrate and secondary effluent discharge when Pure Water is operational, following the Science Advisory Panel recommendations and/or any future requirements for CEC monitoring.

Further, because the total mass of chemicals and CECs discharged to the ocean from the RO concentrate is anticipated to be the same as the current mass discharged from Warren Facility effluent, it is expected that marine impacts, if any, would continue to be minimal and receiving water standards would continue to be upheld during discharge of the concentrate. The Sanitation Districts' comprehensive ongoing coastal monitoring program shows that environmental impacts associated with current effluent discharge, as measured by water and sediment quality, benthic and fish surveys, tissue analyses, and microbiological assessments, are indistinguishable from background conditions.

Additionally, some chemical concentrations in the RO concentrate may decrease from their current levels. Implementation of an enhanced source control program for compliance with IPR and DPR regulations, in addition to the Sanitation Districts' existing pretreatment program, could potentially reduce some chemicals in influent wastewater, and thus effluent wastewater and RO concentrate. Additional treatment steps, such as nitrification/denitrification or tertiary filtration, or ozone with biological activated carbon may be implemented prior to RO treatment (in addition to MBR) in order to remove nutrients and organics and/or comply with water quality requirements for DPR. Reducing these concentrations in treated effluent would correspondingly reduce them in the RO concentrate and may

facilitate compliance with potential future nutrient limitations for wastewater discharges or receiving waters.

As a result, Pure Water would not violate any current discharge requirements related to the ocean outfall disposal of RO concentrate. The ocean disposal of RO concentrate from the proposed AWP Facility would meet current regulatory requirements applicable to its discharge and is not expected to generate concerns for water quality. Impacts are considered **less than significant**.

Project-Level Analysis

Joint Treatment Site

Surface Water

Construction

Construction at the Joint Treatment Site would have the potential to result in erosion of excavated soils and temporarily stockpiled soils, which may affect water quality downstream. In addition, during heavy rain events, stormwater that passes through construction sites may carry pollutants into local stormwater collection systems and downstream receiving waters or directly into an adjacent natural drainage or receiving waters, negatively impacting water quality. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion, sedimentation, and transport of pollutants. Such measures may include, but not be limited to, covering of stockpiles, stabilization of disturbed slopes, and installation of check dams. Through implementation of such measures, impacts associated with surface water quality impacts during construction at the Joint Treatment Site would be **less than significant**.

Operation

The Sanitation Districts operate the existing Warren Facility and maintain coverage under an IGP. Currently, this coverage is limited to the area of the existing Warren Facility operations and does not include all proposed Joint Treatment Site facilities and components. Operations associated with the Workforce Training Center fall outside the industrial categories designated under CWA Section 402(p) and therefore would not require coverage under an IGP. Operations associated with the Warren Facility improvements are anticipated to be covered by the Sanitation Districts' existing IGP or an amended IGP. Lastly, it is not clear at this juncture whether operations associated with the AWP Facility would require a separate NPDES permit for stormwater discharges.

If required, Metropolitan would obtain new IGP coverage for the AWP Facility in accordance with **HYD-EC-2**. Metropolitan most likely would implement measures consistent with the On-Site Compliance Option included in Attachment I of the IGP, which allows dischargers to manage stormwater onsite through BMPs or treatment systems. Under this option, stormwater diversion systems would be incorporated into the proposed design of the AWP Facility to capture and divert stormwater runoff to the Warren Facility, after obtaining an IWDP from the Sanitation Districts. In the event of an extreme storm, excess runoff would be diverted to the storm drain system to prevent overloading the Warren Facility treatment system. The IGP requires implementation of a SWPPP, including BMPs, as well as sampling and evaluation of discharges, such as suspended solids, oil and grease, and other industrial contaminants. If an IGP is not required, Metropolitan would still incorporate stormwater diversion systems into the proposed design of the AWP Facility, in addition to implementation of BMPs to manage

stormwater. Through management of stormwater and implementation of BMPs, surface water quality impacts during operation of the Joint Treatment Site would be **less than significant**.

Groundwater

Construction

Excavation during construction at the Joint Treatment Site is not expected to encounter groundwater. If surface water were to be affected by Joint Treatment Site construction activities, the affected water could then infiltrate into the groundwater table. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion, sedimentation, and transport of pollutants to surface waters, which would in turn minimize the potential for pollutants to affect groundwater. Such measures may include, but not be limited to, covering of stockpiles, stabilization of disturbed slopes, and installation of check dams. Similarly, **HAZ-EC-2** and **HAZ-EC-3** would ensure proper management of potential hazardous material pollutants and contaminants during construction, which would protect groundwater and surface water. Through implementation of such measures, impacts associated with groundwater quality impacts during construction at the Joint Treatment Site would be **less than significant.**

Operation

As discussed above for surface water, Metropolitan would capture and divert stormwater to the Warren Facility after obtaining an IDWP from the Sanitation Districts, which would minimize the potential for pollutants to infiltrate into and affect groundwater. In accordance with **HAZ-EC-1**, Metropolitan also would prepare an HMBP and SPCC Plan, which would ensure that hazardous materials are appropriately handled, thus minimizing potential contamination. As such, operation of the Joint Treatment Site would not degrade groundwater quality. Impacts would be **less than significant**.

Backbone Pipeline

Surface Water

Construction

Construction of the backbone pipeline would have the potential to result in erosion of excavated soils and temporarily stockpiled soils, which could affect water quality downstream. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion, sedimentation, and transport of pollutants. Such measures may include, but not be limited to, covering of stockpiles, soil stabilization (hydroseed or bonded fiber matrix), check dams, fiber rolls, silt fences, construction entrance/exit stabilization (i.e., trackout control), and good housekeeping practices. Construction of the backbone pipeline across the San Gabriel River and other major waterways would use trenchless methods, significantly reducing soil disturbance and the potential for sediment and pollutants to enter waterways. Although weather is analyzed to determine appropriate BMPs/SWPPPs, in the event that control measures are overwhelmed by heavy rainfall or other unforeseen conditions, emergency response procedures, including the rapid deployment of additional erosion control measures, would be enacted to minimize the discharge of sediments. Through implementation of such measures, impacts associated with surface water quality during construction of the backbone pipeline would be **less than significant**.

Operation

The temporary excavation to install the backbone pipeline would be backfilled so that existing grades and elevations would be restored. The surface would be stabilized through replacement of paving or vegetation, or other means as applicable to the location to minimize the potential for erosion. The backbone pipeline would involve minor additions of impervious cover at the surface in association with ancillary facilities such as access ways. The addition of impervious cover has the potential to increase runoff flow rate and volume, generate pollutants in the runoff from the impervious area, and may result in the generation of pollutants downstream (e.g., increase in runoff flow rate and volume has the potential to increase degradation of downstream natural drainage system and increase in the sediment load). However, it is anticipated that impacts, if any, would be minor due to the small amounts of impervious cover that would be added. In addition, the CGP would require post-construction BMPs to reduce runoff and pollutants in stormwater discharges that are reasonably foreseeable after construction has been completed. If the development of the SWPPP determines the presence of historical or legacy pollutants[3] at the sites, then the SWPPP would identify appropriate measures so that discharges from the sites would be protective of downstream receiving waters. The post-construction BMPs would be governed by compliance with the CGP and any applicable local or state regulations to identify applicable source control, site design, and structural BMPs, if needed, to minimize the potential for pollutants in stormwater runoff leaving the sites. Operational impacts associated with surface water quality would therefore be **less than significant**.

Groundwater

Construction

Due to the potential presence of shallow groundwater (less than five feet below ground surface) in low-lying areas near rivers, creeks, and recharge facilities, it is anticipated that construction of the backbone pipeline would likely encounter groundwater. During the design process, detailed geotechnical and hydrogeologic investigations would be conducted to determine the groundwater depth, dewatering requirements, and groundwater quality along the backbone alignment. Dewatering and treatment requirements would be determined, including level of treatment and discharge locations for dewatering flow. It is anticipated that dewatering would be accomplished mainly through dewatering pumps located in the pipe trench or could include wellpoint dewatering methods, which involve the use of small-diameter and shallow wells surrounding the excavation site. Required permits for installation, operation, and removal of wells, such as those from the SWRCB, Sanitation Districts, and LACPW, would be obtained by Metropolitan or by the construction contractor prior to dewatering activities. Through compliance with such requirements, impacts associated with groundwater quality during construction of the backbone pipeline would be **less than significant**.

Operation

Periodic inspections and maintenance of the backbone pipeline during operations, such as pipe or appurtenance repairs and/or replacement, would require dewatering. Dewatering for this scenario would require compliance with the CGP, if applicable (i.e., greater than one acre of disturbance for the maintenance) and/or obtaining coverage under an NPDES permit if discharging to the storm drain or to surface waters, or an IWDP through the LACPW and Sanitation Districts for discharging to the sanitary sewer. Dewatering and treatment requirements would be determined, including discharge locations, for

[3] Chemicals that were once used or produced by industry that are no longer in use due to their harmful effects.

dewatering flow. All appropriate permits, including those from the SWRCB, LACPW, and Sanitation Districts, would be obtained for all dewatered discharge locations, as applicable. Through compliance with such requirements, impacts associated with groundwater quality during operation of the backbone pipeline would be **less than significant**.

5.8.5.2 Topic 2: Groundwater Supplies and Recharge

Would Pure Water substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Program-Level Analysis

Construction

As described further below under *Project-Level Analysis*, temporary dewatering could be required in association with construction activities. Additionally, Pure Water would include components that would involve construction of new impervious surfaces. Relative to the benefits of the proposed groundwater recharge, however, temporary dewatering, increased impervious surfaces, and impedance of localized groundwater recharge would be negligible and would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Impacts would be **less than significant**.

Operation

Purified water would be used to replenish groundwater basins via spreading facilities and injection wells. Spreading facilities are large basins that are designed to hold water while it percolates into the underlying groundwater basin while injection wells are wells that typically deliver water directly into the groundwater basin. The groundwater basins that would receive the purified water include the West Coast Basin, Central Basin, and Main San Gabriel Basin. At full buildout (150 MGD), Pure Water would produce an average of 93,000 AFY of purified water for groundwater recharge into these basins, thus contributing to sustaining groundwater levels. Modeling has been conducted for the proposed recharge of Pure Water in each of these groundwater basins to assess the effects that Pure Water would have on groundwater supplies and recharge.

Groundwater replenishment in the Main San Gabriel and Central basins provided by Pure Water would substantially replace the need for imported water for groundwater recharge in these basins. As a result, Metropolitan anticipates reducing or halting deliveries at three service connections where imported water is currently provided for groundwater replenishment in these basins. The three service connections are CENB-48, PM-26, and USG-3. Service connection CENB-48 discharges into the Central Basin. Service connections PM-26 and USG-3 discharge into the Main San Gabriel Basin. Although information regarding average imported water deliveries to these basins is provided below, current water deliveries at these locations are not completed on a regular schedule; the frequency and quantity of deliveries vary each year, and there have been years when no water deliveries were made.

West Coast Basin

As discussed in Section 5.8.1.2, existing recharge facilities within the West Coast Basin include two seawater intrusion barriers: the West Coast Basin Barrier in the cities of Manhattan Beach and Hermosa Beach, and the Dominguez Gap Barrier along the Dominguez Channel in the cities of Wilmington and Carson.

West Basin MWD currently receives recycled water from the City of Los Angeles via the Hyperion Wastewater Treatment Plant (Hyperion) and treats the water at its Edward C. Little Water Recycling Facility (Ed Little). Pure Water would replace the deliveries from Hyperion and serve existing and potential future West Basin MWD demands, including demands for irrigation, industrial, and seawater intrusion barriers. Production from Ed Little over the past five years has been about 31,000 AFY (West Basin 2024). In the future, Pure Water is expected to recharge an additional 9,000 AFY into the West Coast Basin via up to 14 new inland injection wells proposed by WRD that would be located in the City of Carson.

To assess the impacts of groundwater recharge from Pure Water, WRD conducted groundwater modeling of the Central and West Coast basins in 2018 (WRD 2018). The model evaluated various scenarios of purified water quantities that could be delivered to the Central and West Coast basins for groundwater recharge and extraction.

Groundwater modeling for the West Coast Basin conservatively assumed groundwater recharge and pumping of up to 15,000 AF. Based on the conservative modeling scenario, water levels in the basin were projected to increase by up to 24 feet in the City of Carson area, immediately surrounding the West Coast Inland Injection Wellfield. The groundwater levels in key well 460 K in the West Coast Basin have varied from about 43 feet below mean sea level (MSL) to 8 feet above MSL over the past 10 years, a range of 51 feet. Since a 24-foot increase would be within the historical range, this would not adversely affect operations or groundwater recharge. As such, impacts associated with groundwater in the West Coast Basin would be **less than significant**.

Central Basin

As discussed in Section 5.8.1.2, natural replenishment of groundwater in the Central Basin occurs largely from surface flow and underflow of the San Gabriel River in the Whitter Narrows area, as well as from rainfall. Intentional replenishment of groundwater is accomplished by capturing and spreading water at the Rio Hondo Spreading Grounds and San Gabriel Coastal Spreading Grounds in the City of Pico Rivera. Recharge in the Central Basin from imported and recycled water also occurs in association with the Alamitos Gap Seawater Barrier Project.

Total recharge to the Central Basin averages about 140,000 AFY. Metropolitan currently provides groundwater recharge from imported water into the Central Basin via service connection CENB-48. The discharge point is located adjacent to the San Dimas Wash, southwest in the Main San Gabriel Basin of the San Dimas Canyon Spreading Grounds in the City of San Dimas. From this location, the discharged water extends to the San Gabriel Coastal and Rio Hondo spreading basins to ultimately recharge the Central Basin. Over the past 25 years, an average of approximately 9,800 AFY of imported water has been released by Metropolitan from CENB-48 into the San Dimas Wash.

Pure Water would recharge approximately 9,000 AFY into the Central Basin via four aquifer storage and recovery wells proposed by the City of Long Beach and via spreading basins in the San Gabriel Coastal

Spreading Grounds and the Rio Hondo Spreading Grounds. Groundwater pumping in the Central Basin is expected to increase by up to 9,000 AFY, about the same as the increase in groundwater recharge proposed by Pure Water.

Groundwater modeling for the Central Basin conservatively assumed up to 14,000 AFY of recharge (up to 10,000 AFY in the Rio Hondo and San Gabriel Coastal Spreading Grounds area, also referred to as the Montebello Forebay, and up to 4,000 AFY in the Long Beach area). Groundwater modeling assumed pumping would increase by about 10,000 AFY in the northern portion of the Basin and increase by about 4,000 AFY in the Long Beach area. Under these assumptions, water levels in the Long Beach area of the basin were projected to rise by 6 feet. Within the Long Beach area, water levels range from about 120 feet below sea level to about 19 feet below sea level, a range of more than 100 feet. An increase of 6 feet would not adversely affect operations or groundwater recharge. In the Montebello Forebay, model results predict a water table rise of 8 feet. Since water levels in this area already rise within 15 feet of the ground surface during wet periods, this increase could limit the recharge capacity in this area during periods of high water levels. As a result, this could drastically reduce the ability of recharged water to infiltrate and could impact LACPW's existing operations in the area. In the event of high water levels, Pure Water deliveries to this location would be suspended until LACPW notifies Metropolitan that recharge operations may resume. Therefore, Pure Water would not interfere substantially with groundwater recharge in the Central Basin, and impacts would be **less than significant**.

Main San Gabriel Basin

As discussed in Section 5.8.1.2, natural replenishment of groundwater in the Main San Gabriel Basin occurs largely from rainfall and runoff from the San Gabriel Mountains. Intentional replenishment of groundwater is accomplished by capturing and spreading water at 17 spreading basins. The Santa Fe Spreading Grounds and San Gabriel Canyon Spreading Grounds are two of the largest spreading basins in the Main San Gabriel Basin. Both are owned and operated by LACPW and accommodate stormwater runoff, urban runoff, and imported water purchased from Metropolitan or San Gabriel Valley MWD. The freshwater storage capacity of the basin is estimated to be about 8.6 million AF (Main San Gabriel Watermaster 2023b). Under existing conditions, about 96,000 AFY of stormwater runoff and 45,000 AFY of imported water from Metropolitan is recharged in the Main San Gabriel Basin. Current average groundwater pumping in the Main San Gabriel Basin is about 198,000 AFY over the past 10 years. The current groundwater water level in the Baldwin Park key well, the well in the basin used for monitoring, as of December 20, 2024, is 246.8 feet MSL.

Metropolitan currently provides groundwater recharge from imported water into the Main San Gabriel Basin via service connection PM-26. The discharge point is located in the City of Glendora at the northeastern end of the Little Dalton Spreading Grounds, which directly recharges the basin. Over the past 25 years, an average of approximately 1,100 AFY of imported water has been released by Metropolitan from service connection PM-26 into the Little Dalton Spreading Grounds.

Metropolitan also provides groundwater recharge from imported water into the Main San Gabriel Basin via service connection USG-3. The discharge point is located along the San Gabriel River, south of Morris Reservoir and north of the City of Azusa in the unincorporated portion of Los Angeles County. Over the past 25 years, an average of approximately 30,000 AFY of imported water has been released by Metropolitan from service connection USG-3 into the San Gabriel River.

With Pure Water, a total of up to 57,000 AFY, about 45,000 AFY of imported water from Metropolitan and up to 12,000 AFY from San Gabriel Valley MWD, would be replaced with purified water from Pure Water. Recharge would occur at the existing Santa Fe Spreading Grounds and San Gabriel Canyon Spreading Grounds, as well as potential new spreading facilities or injection wells. The same total amount of water would be recharged annually under Pure Water as under existing conditions. Annual pumping also would remain unchanged in the Main San Gabriel Basin.

Metropolitan anticipates reducing or suspending releases of imported water from USG-3 and PM-26, and replacing them, either fully or partially, with purified water via spreading basins at the locations described above.

Between 2016 and 2018, Stetson Engineers Inc. conducted groundwater modeling for the Main San Gabriel Basin (Stetson Engineers Inc. 2018). The initial water level at the key well used in the modeling was 180 feet MSL, which reflected the conditions in 2018 when the modeling was performed. With Pure Water, water levels are projected to increase by approximately 40 feet relative to the initial water level (as of January 2018) and by approximately 117 feet relative to future conditions without Pure Water. Even with this substantial increase, the maximum modeled water levels would remain below the maximum desirable level of 75 feet below the ground surface and would therefore not have a substantial impact on groundwater operations in the basin. Water levels in the vicinity of the San Gabriel Canyon Spreading Grounds would remain largely unchanged with Pure Water. Therefore, Pure Water would not interfere substantially with groundwater recharge in the Main San Gabriel Basin, and impacts would be **less than significant**.

For the three basins (West Coast, Central, and Main San Gabriel), Pure Water would result in a net increase in groundwater recharge and resulting supplies, which would benefit sustainable groundwater management of the subject groundwater basins. Pure Water operations would be managed such that the proposed recharge activities would not interfere substantially with other groundwater recharge operations. Substantial benefits would occur, and adverse operational impacts would be **less than significant**.

Project-Level Analysis

Joint Treatment Site

Construction

Dewatering is not expected to be required at the Joint Treatment Site based on the depth of groundwater and anticipated excavation depths. Therefore, **no impact** would occur.

Operation

Construction at the Joint Treatment Site would result in additional impervious area, which could potentially interfere with groundwater recharge by reducing infiltration to the substrata. However, stormwater generated onsite would be captured and ultimately diverted to the Warren Facility in compliance with applicable regulatory requirements. After treatment, some of this stormwater would be diverted to the AWP Facility, where it would be purified and conveyed for recharge into the groundwater. As such, while localized groundwater recharge at the Joint Treatment Site itself may be diminished through the introduction of impervious surfaces, overall groundwater recharge would not decrease, and **no impact** would occur.

Backbone Pipeline

Construction

It is anticipated that the construction of the backbone pipeline would encounter groundwater based on the potential for groundwater to be shallow in the low-lying areas near rivers, creeks, and recharge facilities, in which case dewatering would be required. Such dewatering activities would be temporary in nature and limited in extent and would therefore not substantially decrease groundwater supplies. In addition, compliance with applicable regulatory requirements, the Los Angeles Regional Board's WDRs, and applicable CGP and IWDP requirements would ensure that dewatering associated with backbone pipeline construction would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Impacts would be **less than significant.**

Operation

Backbone pipeline appurtenances would contribute a minor amount of additional impervious surface features, which would not meaningfully reduce groundwater recharge. While the majority of the backbone pipeline would be located along and/or outside the perimeter of existing groundwater recharge facilities to avoid impact to existing groundwater recharge capacity, segments of the backbone pipeline may be located within existing groundwater recharge facilities; however, considering the length and width of the pipe in comparison to the overall recharge facilities, it is anticipated that any associated reduction in infiltration capacity would be minor. Accordingly, impacts related to the reduction of local or regional infiltration and associated groundwater recharge capacity would be **less than significant**.

5.8.5.3 Topic 3: Drainage Patterns

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

i) Result in substantial erosion or siltation onsite or offsite;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;

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

iv) Impede or redirect flood flows?

Program-Level Analysis

Construction

Construction of the Pure Water facilities and components would result in ground disturbance, which could alter surface water runoff patterns and result in erosion and siltation. As discussed above in Section 5.8.5.1, in accordance with **HYD-EC-1** Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to stabilize soils and accommodate site runoff

in a manner that would minimize the potential for erosion and siltation onsite and offsite, flooding onsite and offsite, and exceeding the capacity of stormwater drainage systems or providing substantial additional sources of polluted runoff. The SWPPPs would also address potential alterations to drainage patterns associated with locations where construction activities would cross or occur adjacent to curbs and gutters and local storm drains. The SWPPPs would be prepared to maintain conveyance capacity such that no flooding or exceedance of capacity of stormwater drainage systems would occur, as described in greater detail below under *Project-Level Analysis*. Construction of pipelines across major waterways would be constructed via trenchless methods, which would avoid the potential to alter drainage patterns and impede or redirect flood flows. As such, impacts associated with alterations to drainage patterns during construction would be **less than significant.**

Operation

Upon completion of construction, disturbed areas associated with belowground components (e.g., pipelines) would be restored to pre-existing conditions, including hardscaping, landscaping, or asphalt. In addition, the CGP would require post-construction BMPs to reduce runoff, including runoff that may contain pollutants. The post-construction BMPs would be governed by compliance with the CGP and any applicable local or state regulations to identify applicable source control, site design, and structural BMPs, if needed, to minimize the potential for pollutants in stormwater runoff leaving the disturbed areas. These belowground components would not result in substantial permanent alteration to drainage patterns in a manner that would result in increased erosion or siltation onsite or offsite, result in an increased rate or amount of surface runoff in a manner which would result in flooding onsite or offsite, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows.

Permanent aboveground components (e.g., treatment facilities, pump stations, and appurtenant facilities) would result in a permanent alteration to site drainage patterns through the introduction of impervious surfaces. However, through compliance with applicable permits, stormwater generated at these sites would be handled in accordance with regulatory standards and permits such that the facilities would not result in increased erosion or siltation onsite or offsite, result in an increased rate or amount of surface runoff in a manner which would result in flooding onsite or offsite, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows.

Pure Water would result in an additional water source at the Rio Hondo, San Gabriel Coastal, Santa Fe, and San Gabriel Canyon spreading grounds. The spreading facilities are designed to accommodate such activities and therefore the addition of Pure Water would not result in substantial erosion or siltation onsite or offsite, substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows.

As described above in Section 5.8.5.2, Pure Water would reduce or suspend recharge of imported water at three service connections (CENB-48, PM-26, and USG-3), which currently discharge to the San Dimas Wash, Little Dalton Creek, and the San Gabriel River between Morris Dam and Santa Fe Dam, respectively. Because the changes in releases at these service connections would result in a reduction in flows, they would not result in substantial erosion or siltation onsite or offsite, substantially increase the

rate or amount of surface runoff in a manner which would result in flooding onsite or offsite, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows.

Impacts associated with Pure Water's operation of belowground and aboveground components; releases into the Rio Hondo, San Gabriel Coastal, Santa Fe, and San Gabriel Canyon spreading grounds; and reduction or suspension of releases to service connections CENB-48, PM-26, and USG-3 would be **less than significant**.

Project-Level Analysis

Joint Treatment Site

Construction

Construction at the Joint Treatment Site would result in ground disturbance, particularly associated with excavation, grading, and stockpiling soils, which could alter surface water runoff patterns and result in erosion and siltation. The addition of impervious surfaces (e.g., concrete foundations, pavement) during construction at the Joint Treatment Site would have the potential to result in increased surface runoff during storm events. As discussed above in Section 5.8.5.1, in accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to stabilize soils and accommodate site runoff in a manner that would minimize the potential for erosion and siltation onsite and offsite, flooding onsite and offsite, and exceeding the capacity of stormwater drainage systems or providing substantial additional sources of polluted runoff. Such measures may include, but not be limited to, covering of stockpiles, soil stabilization (hydroseed or bonded fiber matrix), check dams, fiber rolls, silt fences, construction entrance/exit stabilization (i.e., trackout control), and good housekeeping practices. In addition, the Joint Treatment Site is not within a floodplain, and temporary construction equipment and structures at the Joint Treatment Site would not impede or redirect flood flows. As such, impacts would be **less than significant**.

Operation

Following completion of construction, the Joint Treatment Site would be developed primarily with impervious surfaces consisting of pavement and structures. This would represent an alteration of drainage patterns compared to existing conditions, where a majority of the Joint Treatment Site (particularly the AWP Facility site) is undeveloped. The addition of impervious surfaces at the site would minimize the potential for erosion but would increase the amount of surface runoff. Stormwater diversion systems would be incorporated into the proposed design of the AWP Facility to capture and divert stormwater runoff. In accordance with the CGP, post-construction BMPs would also be installed to reduce runoff. Additionally, **HYD-EC-2** would require that a SWPPP be implemented during operation of the AWP Facility. As such, stormwater runoff generated onsite would be appropriately accommodated such that no flooding or exceedance of storm drain capacity would occur. In addition, the Joint Treatment Site is not within a floodplain and facilities at the Joint Treatment Site would not impede or redirect flood flows. As such, impacts would be **less than significant**.

Backbone Pipeline

Construction

Construction of the backbone pipeline would result in ground disturbance, particularly associated with trenching and stockpiling of soils, which could alter surface water runoff patterns and result in erosion and siltation. As discussed above in Section 5.8.5.1, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion and sedimentation in accordance with **HYD-EC-1**. Such measures may include, but not be limited to, covering of stockpiles, soil stabilization (hydroseed or bonded fiber matrix), check dams, fiber rolls, silt fences, construction entrance/exit stabilization (i.e., trackout control), and good housekeeping practices. The SWPPPs would also address potential alterations to drainage patterns associated with locations where trenching would cross or occur adjacent to curbs and gutters and local storm drains. The SWPPPs would be prepared to maintain conveyance capacity such that no flooding or exceedance of capacity of stormwater drainage systems would occur. For curb and gutter crossings, the SWPPPs would include procedures for continued conveyance capacity of the curb and gutter in either a diversion pipe or by restoring the function of the curb and gutter with trench plates when rain is forecasted. Trench plates installed flush with the pavement would allow the majority of, if not all, surface runoff to reach the curb and gutter. At locations where open trenches cross local storm drain systems, the SWPPP would include appropriate measures to either relocate or protect the existing storm drain system in place, such as through shoring, bracing, and/or temporary reinforcement of the storm drainpipes. Construction of the backbone pipeline across the San Gabriel River and other waterways would be constructed via trenchless methods, which would avoid the potential to alter drainage patterns and impede or redirect flood flows. As such, impacts would be **less than significant**.

Operation

Upon completion of construction of the backbone pipeline, disturbed areas would be restored to pre-existing conditions, including hardscaping, landscaping, or asphalt. Installation of the backbone pipeline would therefore not result in a substantial permanent alteration of drainage patterns. The potential for erosion and siltation would not be increased compared to existing conditions. Similarly, installation of the backbone pipeline would not result in a substantial increase in impervious surface area and would therefore not increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite or exceed the capacity of existing or planned stormwater drainage systems. The belowground pipeline would not have the potential to impede or redirect flood flows. As such, impacts would be **less than significant.**

5.8.5.4 Topic 4: Flood Hazards

Would Pure Water, in flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?

Program-Level Analysis

As described in Section 5.8.1.1, the Pure Water components would not be located in areas that are expected to be subject to tsunami or seiche hazards. FEMA 100-year floodplains located in the Pure Water area are generally coincident with the courses of rivers, creeks, and channels, including the Los Angeles River, San Gabriel River, Dominguez Channel, and Compton Creek (**Figure 5.8-2**). The backbone pipeline would cross and be located adjacent to 100-year floodplains associated with these drainages, as

discussed below under *Project-Level Analysis.* No other components are expected to be located within or adjacent to flood zones. Impacts would be **less than significant.**

Project-Level Analysis

Joint Treatment Site

The Joint Treatment Site is not within flood hazard, tsunami, or seiche zones. The Joint Treatment Site is over two miles away from the coastline and is at approximately 42 feet in elevation, minimizing the risk of tsunamis. The Joint Treatment Site also does not fall within the Tsunami Hazard Area identified by the California Department of Conservation (2025). There are no major lakes or reservoirs near the Joint Treatment Site that put it at risk of seiches. Therefore, construction and operation at the Joint Treatment Site would not result in a risk of pollutant release due to inundation from flood hazard, tsunami, or seiche. **No impact** would occur.

Backbone Pipeline

The backbone alignment begins over two miles away from the coastline, with elevations ranging between 42 feet near the Joint Treatment Site and 760 feet near the San Gabriel Canyon Spreading Grounds. There are no major lakes or reservoirs near the backbone alignment that put it at risk of seiches. The backbone alignment does not fall within the Tsunami Hazard Area identified by the California Department of Conservation (2025). The backbone pipeline and associated construction sites would therefore not be within tsunami or seiche zones. The backbone pipeline would cross the FEMA 100-year floodplain at multiple locations, including the Dominguez Channel, Compton Creek, Los Angeles River, and San Gabriel River (**Figure 5.8-2**). These crossings would be conducted using trenchless construction methods, which would minimize the potential impacts related to flood hazards because physical components would not be located within the floodplains. During construction of the backbone pipeline, potential sources of pollutant runoff would be minimized through compliance with the CGP and development and implementation of a SWPPP in accordance with **HYD-EC-1**. The SWPPP would include measures such as covering of stockpiles, stabilization of disturbed slopes, check dams, proper storage of hazardous materials onsite, proper location of staging and other areas, and other measures to minimize erosion and sedimentation. Compliance with the SWPPP would minimize the risk of releasing pollutants. Upon completion of construction, the backbone pipeline would be located below ground, and surfaces in the floodplain disturbed during construction would be restored to pre-existing conditions. As such, there would not be an increased risk for the release of pollutants associated with operation of the backbone pipeline. Impacts would be **less than significant**.

5.8.6 Level of Significance Before Mitigation

Impacts related to surface and groundwater quality, groundwater supplies and recharge, alteration of drainage patterns, and flood hazards would be **less than significant**. **No impact** related to obstructing implementation of a sustainable groundwater management plan would occur.

5.8.7 Mitigation Measures

Impacts related to hydrology and water quality would be less than significant; therefore, no mitigation is required.

5.8.8 Level of Significance After Mitigation

As described above, impacts related to surface and groundwater quality, groundwater supplies and recharge, alteration of drainage patterns, and flood hazards would be **less than significant without mitigation**. There would be **no impact** related to obstructing implementation of a sustainable groundwater management plan.

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5.9 LAND USE AND PLANNING

This section addresses the potential land use and planning impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

LAND USE AND PLANNING LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

Both the program- and project-level analyses are based on readily available, general information derived from applicable resources and planning documents, as well as the land use policy consistency analysis provided in Appendix H.

5.9.1 Existing Conditions

5.9.1.1 Joint Treatment Site

The Joint Treatment Site is located on land owned by the Sanitation Districts in the City of Carson, bordered to the south by the community of Wilmington-Harbor City in the City of Los Angeles (**Figure 2-2**). The location of the proposed AWP Facility is currently vacant and was purchased by the Sanitation Districts in 2000. Also within the Sanitation Districts' property is the Warren Facility. The Warren Facility is an existing wastewater treatment facility providing primary and secondary treatment to an average of approximately 250 MGD of wastewater. The Warren Facility and AWP Facility site have a City of Carson zoning designation of Heavy Manufacturing and a general plan land use designation of Heavy Industrial.

The Workforce Training Center would also be located on land owned by the Sanitation Districts. The site is currently occupied by a plant nursery business, under a lease agreement with the Sanitation Districts. The Workforce Training Center site has a City of Carson zoning designation of Residential Agricultural

and a general plan land use designation of Light Industrial. The City of Carson intends to update its zoning code to conform to the 2040 General Plan adopted by the City in April 2023, which will assign a Light Industrial designation to this property (City of Carson 2025).

5.9.1.2 Backbone Conveyance System

The backbone alignment passes through the cities of Carson, Long Beach, Lakewood, Cerritos, Bellflower, Norwalk, Downey, Santa Fe Springs, Pico Rivera, Whittier, Industry, Baldwin Park, Irwindale, Duarte, and Azusa, as well as unincorporated portions of Los Angeles County. Each of these jurisdictions has adopted a general plan that guides land use designations and related policies. The pipeline would be buried under public roadways and in ROWs situated along the San Gabriel River that are currently held by SCE, LADWP, LACFCD, USACE, and private parties. Land uses along the backbone alignment predominantly include residential uses along with industrial uses in the cities of Carson and Irwindale, as well as interspersed commercial uses (refer to **Table 5.9-1** for specific land use designations by jurisdiction).

5.9.1.3 DPR Facilities for Weymouth or Satellite Location

The various DPR facilities that would not be located at the Joint Treatment Site include the Azusa Pipeline, DPR treatment facility at Weymouth WTP, DPR pipeline, and potential satellite DPR treatment facility. The Azusa Pipeline is located in the cities of Azusa, Glendora, San Dimas, and La Verne, as well as unincorporated portions of Los Angeles County. The existing Weymouth WTP is located in the City of La Verne, and has a zoning designation of Official and general plan land use designation of Community Facility/Freeway. Land uses surrounding Weymouth WTP include residential uses.

The locations of the other DPR facilities and pipelines are not yet known. The area encompassing these potential locations is generally located along the I-210 corridor between the Santa Fe Spreading Grounds and Weymouth WTP (refer to **Figure 2-1**). This area is primarily developed with residential uses interspersed with commercial uses.

5.9.1.4 Recharge Facilities

Existing spreading facilities that would be utilized by Pure Water include the Rio Hondo Spreading Grounds in the City of Pico Rivera (zoning designation of Public Facilities and general plan land use designation of Public Facilities), the San Gabriel Coastal Spreading Grounds in the City of Pico Rivera (zoning designation of Public Facilities and general plan land use designation of Public Facilities), the Santa Fe Spreading Grounds in the City of Irwindale (zoning designation of Agriculture and Open Space and general plan land use designation of Open Space/Easements), and the San Gabriel Canyon Spreading Grounds in the City of Azusa (zoning designation of Recreation and general plan land use designation of Recreation), all of which are owned and operated by the LACPW. In addition to these spreading facilities, Pure Water would also utilize existing injection wells in the cities of Carson and Long Beach. These spreading facilities and injection wells serve the West Coast, Central, and Main San Gabriel basins. In addition to utilizing these existing facilities, Pure Water proposes to construct and operate new recharge facilities within these basins; the locations of these new facilities are not yet known.

5.9.1.5 Non-potable Water Facilities

The locations of the proposed non-potable water facilities are not yet known but are expected to be within public roadways and on Sanitation Districts-owned property in the City of Carson.

5.9.1.6 Sanitation Districts Support Facilities

The Sanitation Districts Support Facilities would be located within the Sanitation Districts' existing Warren Facility in the City of Carson. As noted above in Section 5.9.1.1, the Warren Facility has a zoning designation of Heavy Manufacturing and a general plan land use designation of Heavy Industrial.

5.9.2 Regulatory Framework

Land use planning decisions are made at the local, rather than the federal or state, level. Applicable plans, therefore, include the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (also known as Connect SoCal) and local general plans, as described below.

5.9.2.1 Connect SoCal

SCAG's Connect SoCal 2024 is intended to achieve a variety of long-term planning goals, including achieving a more sustainable growth pattern, balancing future mobility and housing needs with goals for the environment, the regional economy, social equity and environmental justice, and public health. To achieve these goals, it includes a wide array of strategies, including those to support implementation and sustainability policies as well as promote a "green" region. For example, Connect SoCal 2024 states: "In an effort to support partners in tackling the region's deepening water crisis, SCAG's Regional Council unanimously adopted a Water Action Resolution (Resolution No. 22-647-3) in October 2022 to reduce water use; improve water conservation, reuse and efficiency; enhance water systems' health and resilience; pursue and potentially implement new water supply and storage opportunities; and support investments in water infrastructure and conservation practices that support the region's economic and population growth and foster planning for the region's housing needs. This resolution also called on SCAG to 'identify, recommend and integrate into Connect SoCal policies and strategies to align investments in water infrastructure with housing needs and the adopted growth forecast and development pattern'" (SCAG 2024).

5.9.2.2 Local General Plans

Land use plans, policies, and regulations are contained in the general plans of the various jurisdictions within which the Pure Water facilities would be located. Each general plan has various elements that address issues such as land use compatibility, open space, and conservation. Each local jurisdiction has also adopted a zoning ordinance, which helps to implement the provisions of the general plan. The land use jurisdictions within which Pure Water facilities and components would be located and the underlying and adjacent land use designations are presented in **Table 5.9-1**. Details of applicable general plan policies are provided in Appendix H.

Table 5.9-1
LAND USE JURISDICTIONS AND DESIGNATIONS

Jurisdiction	Pure Water Components/Facilities	Underlying/Adjacent Land Uses
City of Carson	AWP Facility and Warren Facility Improvements	Light Industrial, Heavy Industrial, General Commercial, Flex District
	Workforce Training Center	Light Industrial, Heavy Industrial, Park/Open Space, Low Medium Density Residential Mix
	Sanitation Districts Support Facilities	Light Industrial, Heavy Industrial, General Commercial, Flex District

Jurisdiction	Pure Water Components/Facilities	Underlying/Adjacent Land Uses
	Backbone Pipeline	Light Industrial, Heavy Industrial, Corridor Mixed Use, General Commercial, Public/Institutional, Park/Open Space, Low Density Residential, Low Medium Density Residential Mix, High Density Residential
	Injection Wells[1]	*Underlying and adjacent land use designations will be dependent on specific location of the injection wells.*
City of Los Angeles	AWP Facility (Adjacent)	Low Density Residential, Neighborhood Commercial
City of Long Beach	Backbone Pipeline	Open Space, Founding and Contemporary Neighborhood, Multiple Family Residential Low Density, Multiple Family Residential Moderate Density, Neighborhood Serving Center or Corridor Low Density, Neighborhood Serving Center or Corridor Moderate Density, Neo Industrial, Community Commercial
	Injection Wells[1]	*Underlying and adjacent land use designations will be dependent on the specific location of the injection wells.*
City of Lakewood	Backbone Pipeline	Commercial, Low Density Residential, Medium/High Density Residential, Public/ Quasi Public, Open Space
City of Cerritos	Backbone Pipeline	Industrial/Commercial, Low Density Residential, Medium Density Residential, Utility and Flood Control
City of Bellflower	Backbone Pipeline	Single Family Residential, Low Density Residential, High Density Residential, Open Space
City of Norwalk	Backbone Pipeline	Low Density Residential, High Density Residential, Open Space/Schools/Public Facilities, Light Industrial
City of Downey	Backbone Pipeline	Low Density Residential, Medium Density Residential, Open Space, School, Public, General Manufacturing, Commercial Manufacturing
City of Santa Fe Springs	Backbone Pipeline	Parks and Open Space, Industrial, Railroad ROW
City of Pico Rivera	Backbone Pipeline	Low Density Residential, Medium Density Residential, Commercial, Light Industrial, General Industrial, Public Facilities, Park/Open Space, San Gabriel River
	Whittier Narrows Pump Station[2]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on the specific pump station location.*
	Existing Rio Hondo Spreading Grounds	Public Facilities, General Industrial
	Existing San Gabriel Coastal Spreading Grounds	Public Facilities, Low Density Residential

Jurisdiction	Pure Water Components/Facilities	Underlying/Adjacent Land Uses
City of Whittier	Backbone Pipeline	General Industrial, Park
	Whittier Narrows Pump Station[2]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
City of Industry	Backbone Pipeline	Employment, Commercial, Recreation & Open Space, Institutional
	Whittier Narrows Pump Station[2]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
City of El Monte	Backbone Pipeline (Adjacent)	Low Density Residential, Medium Low Density Residential, Medium Density Residential, High Density Residential, Public and Institutional, Regional Commercial
City of Baldwin Park	Backbone Pipeline	Commercial/Industrial, General Industrial, Public Facilities
	Santa Fe Pump Station[3]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
City of Irwindale	Backbone Pipeline	Open Space/Easements, Industrial/Business Park, Regional Commercial, Commercial/Recreation, Quarry Overlay
	Santa Fe Pump Station[3]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
	DPR Pipeline	Residential, Commercial, Regional Commercial, Industrial/Business Park, Public/Institutional
	Existing Santa Fe Spreading Grounds	Open Space/Easements
City of Duarte	Backbone Pipeline	Low Density Residential, Hospital, Industrial, Public Facility, Open Space, Specific Plan
	Santa Fe Pump Station[3]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
	Existing Santa Fe Spreading Grounds	Industrial, Hospital
City of Azusa	Backbone Pipeline	Light Industrial, Open Space, Recreation
	Santa Fe Pump Station[3]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
	Existing San Gabriel Canyon Spreading Grounds	Recreation, Open Space, Low Density Residential, Moderate Density Residential, Institutional/ School
	DPR Pipeline	Industrial, Commercial Mixed Use
	Azusa Pipeline	Low Density Residential, Moderate Density Residential, Light Industrial, Recreation, Neighborhood Center, Monrovia Nursery Specific Plan (Residential, Village Core, Recreation Center)
City of Covina	DPR Pipeline	Low Density Residential, High Density Residential, School, General Commercial, General Industrial

Jurisdiction	Pure Water Components/Facilities	Underlying/Adjacent Land Uses
City of Glendora	DPR Pipeline	Arrow Highway Specific Plan (Corridor Commercial, Commercial Core Mixed-Use, Neighborhood Commercial Mixed-Use, Office/Light Industrial Mixed-Use, Open Space/ Trail, Parks & Parking Overlay, Corridor Industrial, Transition Mixed-Use, Corridor Medium Density Residential, Corridor High Density Residential), Utility and Flood Control
	Azusa Pipeline	Low Density Residential, Low/Medium Density Residential, Medium Density Residential, Medium/High Density Residential, High Density Residential, Village Mixed Use, General Commercial, Route 66 Specific Plan Area (Grand Avenue Commercial Gateway, Technology, Commerce and Office), Railroad
City of San Dimas	DPR Pipeline	Single Family Low Residential, Low/Medium Residential, Medium Residential, Commercial, Industrial, Public/Semi-public
	Azusa Pipeline	Single Family Very Low Residential, Single Family Low Residential, Low/Medium Residential, Office/Professional, Commercial, Public/Semi-public, Open Space/Park
City of La Verne	DPR Pipeline	Industrial, Residential, Community Facility/ Freeway
	Azusa Pipeline	Residential
	DPR Facilities at Weymouth WTP	Residential, Open Space, Community Facility/ Freeway
Unincorporated Los Angeles County	Backbone Pipeline	Residential (Residential 5, 9, 18, and 30), General Commercial, Light Industrial, Heavy Industrial, Parks and Recreation, Conservation, Public and Semi-Public, Water
	Whittier Narrows Pump Station[2]	*Underlying and adjacent land use designations (if applicable for this jurisdiction) will be dependent on specific location of pump station.*
	DPR Pipeline	Residential (Residential 9, 18, 30), Mixed Use, General Commercial, Water, Light Industrial
	Azusa Pipeline	Residential 5, Residential 9, General Commercial
	DPR Facilities at Weymouth WTP (Adjacent)	Residential 9

[1] Potential Pure Water injection wells include up to 14 proposed injection wells in the City of Carson and 4 aquifer storage and recovery wells in the City of Long Beach. The specific locations of the proposed new wells have not yet been determined. Injection wells in the City of Carson would be served by pipeline extending from the AWP Facility or branching off from the backbone pipeline. Wells in the City of Long Beach would be served by pipelines branching off from the backbone pipeline. These distribution pipelines, whose alignments have not yet been identified, are considered to be part of the injection wells for purposes of this land use consistency analysis.

[2] There are four potential jurisdictions which could house the Whittier Narrows Pump Station: City of Whittier, City of Industry, City of Pico Rivera, or unincorporated Los Angeles County.

[3] There are four potential jurisdictions which could house the Santa Fe Pump Station: City of Irwindale, City of Baldwin Park, City of Duarte, or City of Azusa.

California requires that local jurisdictions' general plans include certain elements; however, jurisdictions have discretion to combine these elements and to add other elements, based on the needs of their

community (California Government Code Section 65301(a)). For the purposes of discussion and analysis herein, the elements from the various jurisdictions' general plans have been categorized into 14 comprehensive categories, including Land Use, Circulation, Community Design, Housing, Recreation, Conservation, Open Space, Historic Preservation, Noise, Public Services and Facilities, Safety, Economic Development, Air Quality, and Environmental Justice.

Land Use elements direct the long-term physical development of jurisdictions by guiding use, form, and the characteristics of improvements to the land. They serve as regulatory documents designating the type, intensity, location, and general distribution of a variety of land uses, including, but not limited to, housing, businesses, industries, open space, and public uses. Land use elements set forth goals and policies to achieve a balance and harmony between public and private land uses, considering economic, natural resources, community well-being, and environmental factors.

Circulation elements describe the existing multi-modal transportation networks within a jurisdiction, including motor vehicle, public transportation, bicycle, pedestrian, rail, and air transportation facilities. They also establish the vision, goals, policies, and implementation measures required to improve and enhance local and regional transportation networks that serve to move people, goods, and resources.

Community Design elements guide the design of urban form, including neighborhoods, buildings, and streets, in an attempt to positively influence how people access, experience, and use places. Factors such as visual appearance, community orientation, and integration with the public realm are considered in community design elements. Goals and policies typically focus on both preserving existing neighborhoods that define a community's unique character and building upon them to allow for continued adaptation and improvement of the built environment.

Housing elements implement the declaration of state law that "the availability of housing is matter of vital statewide importance and the attainment of decent housing and a suitable living environment for Californians is a priority of highest order" (California Government Code Section 65580). Provisions in housing elements are more specific and directive than other elements and contain detailed guidance and reviews. Housing elements contain the following: review of previous housing element; housing needs assessment; inventory and analysis of adequate sites; analysis of potential governmental and non-governmental constraints; housing policies and programs; and quantified objectives.

Recreation elements provide a framework to meet a jurisdiction's recreational needs and promote accessibility to recreational facilities that play a vital role in maintaining a high quality of life for residents. Recreational resources include, but are not limited to, parks, community centers, golf courses, and trails for hiking, biking, and equestrian uses. Goals and policies in recreation elements typically focus on the design, acquisition, and development of new recreational facilities and the management and enhancement of existing recreational facilities.

Conservation elements describe a jurisdiction's natural resources, including water, forests, soils, fisheries, wildlife, and minerals, and the benefits that these resources provide the community. They establish goals and policies for the retention, enhancement, and development of such resources. Conservation elements work in coordination with land use elements (described above) and open space elements (described below) to guide conservation and development, balancing community needs with environmental preservation and the effects of climate change.

Open Space elements, in conjunction with conservation elements (described above), identify areas that provide value in an essentially undeveloped condition and create plans to preserve such areas. Open space elements reinforce conservation elements by guiding the comprehensive and long-range preservation of open space lands that are important to the conservation of natural resources. Open space lands or waters may provide value related to, among other things, recreation, health, habitat, biodiversity, wildlife conservation, aesthetics, economy, climate change mitigation and adaptation, flood risk reduction, and managed natural resources production.

Historic Preservation elements outline a vision for future historic preservation efforts and the actions that need to be taken to achieve that vision. Historic preservation elements typically provide historical context for the given jurisdiction, identify historic landmarks, designate historic districts, and set forth goals and policies to guide the actions of jurisdictional departments and create partnerships with the community to implement the historic preservation program.

Noise elements are intended to ensure that a jurisdiction limits the exposure of the community to excessive noise levels in noise-sensitive areas. Noise sources considered in noise elements include highways and freeways, primary arterials and major local streets, railways, aircraft, and stationary sources, such as industrial plants. Noise elements include mapped noise contours (lines of equal noise level exposure) that are used as a guide to establish a pattern of land use that is compatible with the noise level exposure. In areas where land uses are exposed to (or expected to be exposed to) incompatible noise levels under existing or future conditions, implementation measures are identified to address such issues.

Public Services and Facilities elements promote the orderly and efficient planning of public facilities and infrastructure in conjunction with land use development and growth to ensure that adequate public services are in place to support the quality of life within the community. Public services and facilities typically encompass public safety services (e.g., police and fire services), environmental services (e.g., drinking water, sanitary sewers, and solid waste disposal), community services (e.g., schools and libraries), and infrastructure (e.g., roadways and utilities).

Safety elements are intended to reduce the potential short- and long-term risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, climate change, and other hazards. Other locally relevant safety issues, such as airport land use, emergency response, and hazardous materials spills, may also be included. Safety elements identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits and contain general hazard and risk reduction strategies complementary with those of local hazard mitigation plans. Policies in a safety element identify hazards and emergency response priorities, as well as mitigation through avoidance of hazards by new projects and reduction of risk in developed areas.

Economic Development elements outline a jurisdiction's economic development goals and provide strategies that contribute to economic well-being. The overall performance of the economy and economic development efforts influence land use and development patterns. Through implementation of economic development elements, jurisdictions plan for the economic health and prosperity of their physical and social environments and plan strategically for the future economy.

Air Quality elements describe local air quality conditions, including air quality monitoring data, emission inventories, lists of significant air pollutant source categories, attainment designations and status, and

applicable state and federal air quality plans. While air pollution is a regional issue, local governments have an opportunity to address air quality issues through general plans by establishing goals and policies related to land use planning and management of the local circulation system. Through implementation of air quality elements, local governments strive to reduce emissions for the benefit of public health and the economy.

Environmental Justice elements set forth goals, policies, and programs to promote environmental justice, which is defined in California Government Code Section 65040.12(e) as "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Topics typically included in environmental justice elements include pollution exposure (including air quality and water quality); land use compatibility; public facilities; food access; safe and sanitary homes; physical activity; additional unique or compounded health risks, including climate vulnerability; civic or community engagement; and prioritization of improvements for disadvantaged communities.

5.9.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to land use and planning. Pure Water would have a significant impact if it would:

1. Physically divide an established community; or

2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

5.9.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. All ECs listed throughout this EIR are relevant to land use plans, policies, and/or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and are therefore considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

5.9.5 Impact Analysis

5.9.5.1 Topic 1: Physically Divide an Established Community

Would Pure Water physically divide an established community?

Program-Level Analysis

Construction

Construction activities associated with Pure Water facilities and components would be temporary. Construction of facilities and components at the Joint Treatment Site would occur in the City of Carson and would be located at an existing industrial wastewater treatment facility owned by the Sanitation Districts. Construction of the backbone pipeline would be located within 16 jurisdictions, Azusa Pipeline

in 5 jurisdictions, and DPR pipeline potentially in 7 jurisdictions. Pipeline construction would primarily occur within roadways, which would continue to function as roadways following construction. In addition, construction of pipelines would continuously progress along linear alignments and would not occur at a single location for extended periods of time. Construction of the aboveground facilities and components (treatment facilities, pump stations) would occur on individual properties that do not provide through access for the public and therefore would not physically divide established communities. Impacts would be **less than significant**.

Operation

Pure Water's pipelines, once constructed, would be located underground and construction sites would be returned to pre-construction conditions. Pure Water's permanent above-ground facilities and components, including the Joint Treatment Site facilities, Whittier Narrows Pump Station, Santa Fe Spreading Grounds Pump Station, DPR treatment facility at Weymouth WTP, potential satellite DPR facility, and DPR pump stations, would be located at individual properties within areas that do not provide through access for the public and thus would not require the division of a community for operation. As such, these facilities would not physically divide an established community. **No impact** would occur.

Project-Level Analysis

Construction

Construction of facilities at the Joint Treatment Site would occur on property owned by the Sanitation Districts, which does not provide through access to the public. Construction activities would occur entirely within the discrete Sanitation Districts' property and would not physically divide the surrounding community. Construction of the backbone pipeline would be located within 16 jurisdictions. Pipeline construction would primarily occur within roadways and easements, which would continue to function in their current capacity following construction. In addition, construction of the backbone pipeline would continuously progress along a linear alignment and would not occur at a single location for extended periods of time. Impacts would be **less than significant**.

Operation

Once the backbone pipeline is constructed, it would be located underground and construction sites would be returned to pre-construction conditions. The Joint Treatment Site facilities would be located on property owned by the Sanitation Districts, which is surrounded by walls and does not provide through access for the public. The proposed uses would be consistent with current use of the site for wastewater treatment. Therefore, these facilities would not physically divide an established community. **No impact** would occur.

5.9.5.2 Topic 2: Conflict with Land Use Plans

Would Pure Water cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Program-Level Analysis

Connect SoCal

Connect SoCal 2024 includes several specific regional planning policies that are relevant to and supportive of Pure Water. Pure Water would be consistent with these policies, as summarized in **Table 5.9-2**.

Table 5.9-2
SCAG CONNECT SOCAL 2024 POLICY CONSISTENCY ANALYSIS

Applicable Regional Planning Policies	Consistency Analysis
Environment	
48 Promote sustainable development and best practices that enhance resource conservation, reduce resource consumption and promote resilience.	**Consistent**. Pure Water would provide a climate-resilient water supply.
51 Reduce hazardous air pollutants and greenhouse gas emissions and improve air quality throughout the region through planning and implementation efforts.	**Consistent**. As discussed in Section 5.1, *Air Quality*, and Section 5.6, *Greenhouse Gas Emissions*, Pure Water includes environmental commitments and mitigation measures to reduce criteria and toxic air pollutant and GHG emissions.
52 Support investments that reduce hazardous air pollutants and greenhouse gas emissions.	**Consistent**. As discussed in Section 5.1, *Air Quality*, and Section 5.6, *Greenhouse Gas Emissions*, Pure Water includes environmental commitments and mitigation measures to reduce criteria and toxic air pollutant and GHG emissions.
67 Promote sustainable water use planning, practices and storage that improve regional water security and resilience in a drier environment.	**Consistent**. Pure Water would provide a climate-resilient water supply and improve regional water security.

Local General Plan Policies

Pure Water spans numerous jurisdictions and has been assessed for consistency with the applicable general plan land use policies adopted for the purpose of avoiding or mitigating an environmental effect. Analysis of consistency with each applicable policy is provided in Appendix H. The analysis is summarized in this section, organized according to the general plan element categories presented in Section 5.9.2.

Land Use

Pure Water's conveyance pipelines (i.e., backbone pipeline, DPR pipeline, Azusa Pipeline) would be routed along public roadways and in ROWs situated along the San Gabriel River that are currently held by SCE, LADWP, LACFCD, USACE, and private parties. Land uses adjacent to the conveyance alignments predominantly include residential, interspersed commercial, and industrial uses in the cities of Carson

and Irwindale, and open space and recreational uses along the San Gabriel River. Upon completion of construction, the conveyance pipelines would be located underground and disturbed land would be restored to pre-existing conditions. Installation of the conveyance pipelines would not result in permanent changes to land use or otherwise conflict with land use plans or policies adopted for the purpose of avoiding or mitigating an environmental effect. Aboveground facilities, including treatment facilities and pump stations, would introduce new permanent uses. The aboveground facilities with currently known locations would be consistent with existing land uses at their respective sites. While the locations of pump stations along the conveyance alignments and a potential satellite DPR treatment facility are not yet known, they would be located in urbanized, likely industrial, areas, and are not expected to conflict with land use plans or policies adopted for the purpose of avoiding or mitigating an environmental effect.

Circulation

Pure Water's conveyance pipelines would be constructed within public roadways primarily using trenching methods, which would require lane, street, and/or intersection closures. Trenchless/tunneling methods would be used, as necessary, to avoid freeways and major intersections and cross streets. As discussed in Section 5.11, *Transportation*, **TRA-EC-1**, which involves implementation of a traffic control plan and/or traffic management plan (TCP/TMP), would be included to allow for continued adequate circulation during construction of the pipelines within roadways. This would be consistent with policies designed to address potential impacts related to traffic hazards and emergency access. Once constructed, pipelines would be located underground, and disturbed roadways would be restored to pre-existing conditions. Installation of pipelines would therefore not permanently affect circulation. Pure Water's permanent aboveground facilities and components would be located at properties outside of public roadways and would not have the potential to permanently affect circulation. As such, Pure Water would not conflict with circulation-related general plan policies.

Community Design

Pure Water's conveyance pipelines would be located underground and would therefore not affect community design or community character. Areas disturbed during construction of the conveyance pipelines would be restored to pre-existing conditions. The aboveground facilities with known locations would be consistent with existing uses at those sites. Pump stations along the conveyance alignments and potential satellite DPR treatment facility would be located in urbanized areas and would not substantially affect community design or character. As such, Pure Water would not conflict with community design-related general plan policies.

Housing

Pure Water does not propose housing and would not result in the removal of existing housing. As such, Pure Water would not conflict with housing-related general plan policies.

Recreation

Some of Pure Water's conveyance facilities would extend through linear parks and be located adjacent to trails within utility easements. Construction of pipelines in these areas, specifically when trenching methods are used, would result in temporary partial or full removal of these facilities. Upon completion of construction, disturbed land would be restored to pre-existing conditions, and these recreational facilities would be replaced, consistent with applicable land use designations and policies. Pure Water's

other facilities and components would be located within roadways and at properties that do not include recreation facilities. As such, Pure Water would not conflict with recreation-related general plan policies.

Conservation

Pure Water's facilities and components would predominantly be located within urbanized and developed areas where natural resources are generally not present. Natural resources (e.g., biological, water, soil, and mineral resources) are present, however, they occur along the portion of the backbone alignment that parallels the San Gabriel River. Discussion specific to the backbone pipeline is provided below under the *Project-Level Analysis*. In summary, however, Pure Water would not conflict with conservation-related general plan policies.

Open Space

Pure Water's facilities and components would be located predominantly within highly urbanized areas where open space is generally not present. The limited open space that is present in the Pure Water area is located along the backbone alignment. Discussion specific to the backbone pipeline is provided below under the *Project-Level Analysis.* In summary, however, Pure Water would not conflict with open space-related general plan policies.

Historic Preservation

Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance and/or demolition of existing structures, have the potential to affect both currently identified historical and archaeological resources, as well as those that have not yet been identified. Because the exact locations of all the Pure Water facilities and components are unknown at this stage of program design, and because the Pure Water area is sensitive for cultural resources based on the past uses of the area, there is potential for facilities and components to be sited within or adjacent to historical and/or archaeological resources. Mitigation measures **CUL-MM-1** through **CUL-MM-4** identified in Section 5.3, *Cultural Resources,* would require the assessment of these resources and, if found eligible, the appropriate treatment of the resources. With these measures, Pure Water would not conflict with historic preservation general plan policies.

Noise

Construction of Pure Water's facilities and components would generate elevated noise levels at nearby noise-sensitive land uses (NSLUs). In accordance with **NOI-MM-1** identified in Section 5.10, *Noise*, Noise Control Plans would be implemented to reduce construction noise levels to the extent feasible. Several local jurisdictions have adopted policies and/or regulations related to limitations on construction hours and/or the amount of noise produced by construction activities, which would be exceeded by Pure Water. While environmental commitments and the mitigation measure would lessen the impacts from these exceedances, the noise impacts would still be potentially significant and unavoidable. This short-term policy conflict represents a noise, rather than a land use, impact, and is fully addressed in Section 5.10. Upon completion of construction of Pure Water's various facilities and components, underground conveyance pipelines would not generate operational noise. Additional mitigation outlined in Section 5.10 (**NOI-MM-2** and **NOI-MM-3**) would require noise generated by permanent aboveground facilities, namely treatment facilities and pump stations, to comply with applicable jurisdictional noise standards. With these measures, Pure Water would not conflict with noise-related general plan policies.

Public Services and Facilities

Construction and operation of Pure Water would not induce substantial population growth in the area and would therefore not substantially increase demand for public services and facilities or require the provision of new facilities. While construction of the pipelines may temporarily affect access along roadways within which the pipelines would be located, a TCP/TMP would be implemented in accordance with **TRA-EC-1** to allow for continued adequate emergency response and evacuation. As such, Pure Water would not conflict with general plan policies related to public services and facilities.

Safety

Potential safety concerns typically identified in safety elements include fires, floods, seismic hazards, and hazardous materials. Pure Water facilities and components would occur within a VHFHSZ west and north of the Santa Fe Dam Recreation Area. The first onsite construction activities for the Pure Water facilities and components would involve clearing of vegetation (if present) as part of site preparation activities, which would result in the removal of potentially flammable vegetation. Removal of this vegetation and provision of fire extinguishers on site would minimize potential risks associated with the use of equipment with combustion engines.

Pure Water conveyance facilities would cross the FEMA 100-year floodplain at multiple locations, including the Dominguez Channel, Compton Creek, Los Angeles River, and San Gabriel River (see Section 5.8, *Hydrology and Water Quality*). These crossings would be conducted using trenchless construction methods, which would minimize the potential impacts related to flood hazards. Potential seismic hazards present in the Pure Water area, including fault rupture, strong seismic ground shaking, and liquefaction, would have the potential to affect the integrity of Pure Water facilities and components, which could result in flooding if the facilities were to rupture and result in uncontrolled release of water. As discussed in Section 5.5, *Geology and Soils*, resiliency of the facilities for a given seismic event would be considered during design and construction. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be conducted that would inform appropriate design and construction measures to accommodate potential seismic hazards, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook).

Construction of Pure Water's facilities and components would require the use of typical hazardous materials. Metropolitan and its construction contractor(s) would comply with applicable federal, state, and local regulations pertaining to hazardous materials use, handling, storage, and disposal. The Pure Water facilities cross several hazardous materials sites/properties. Through implementation of **HAZ-EC-2** (SSSP), **HAZ-EC-3** (Hazardous Materials Management Plan), **HAZ-EC-4** (utility location survey), and **HAZ-EC-5** (demolition evaluations), construction would not result in the exposure of construction workers, the public, and/or the environment to hazardous materials. In addition, hazardous materials would be used at treatment facilities and potentially pump stations. These materials would be handled appropriately in accordance with **HAZ-EC-1**, which requires preparation and implementation of an HMBP and SPCC.

As such, Pure Water would not exacerbate fire risks or expose people to risks from wildfire, expose people to flood or seismic hazards, or conflict with safety-related general plan policies.

Economic Development

Construction and operation of Pure Water would result in the creation of jobs and training opportunities for the local workforce, thereby contributing to the region's economic development. As discussed in Section 4.4, *Economic and Fiscal,* LAEDC completed studies that analyzed the projected economic and fiscal impact of both construction expenditures and ongoing activity associated with Pure Water (LAEDC 2021, 2025). According to LAEDC's 2025 study report, construction of Pure Water's facilities and components is expected to generate over $15.1 billion in economic output and support approximately 75,660 job-years in Southern California, of which 43,700 would be directly involved in construction of program facilities and components. These construction jobs would span numerous industry sectors. In addition, annual operations and maintenance activities associated with Pure Water are estimated to lead to approximately 2,460 job-years across the Southern California region. The fiscal benefits of Pure Water also may extend to increased tax revenues (LAEDC 2025). As such, Pure Water would not conflict with general plan policies related to economic development.

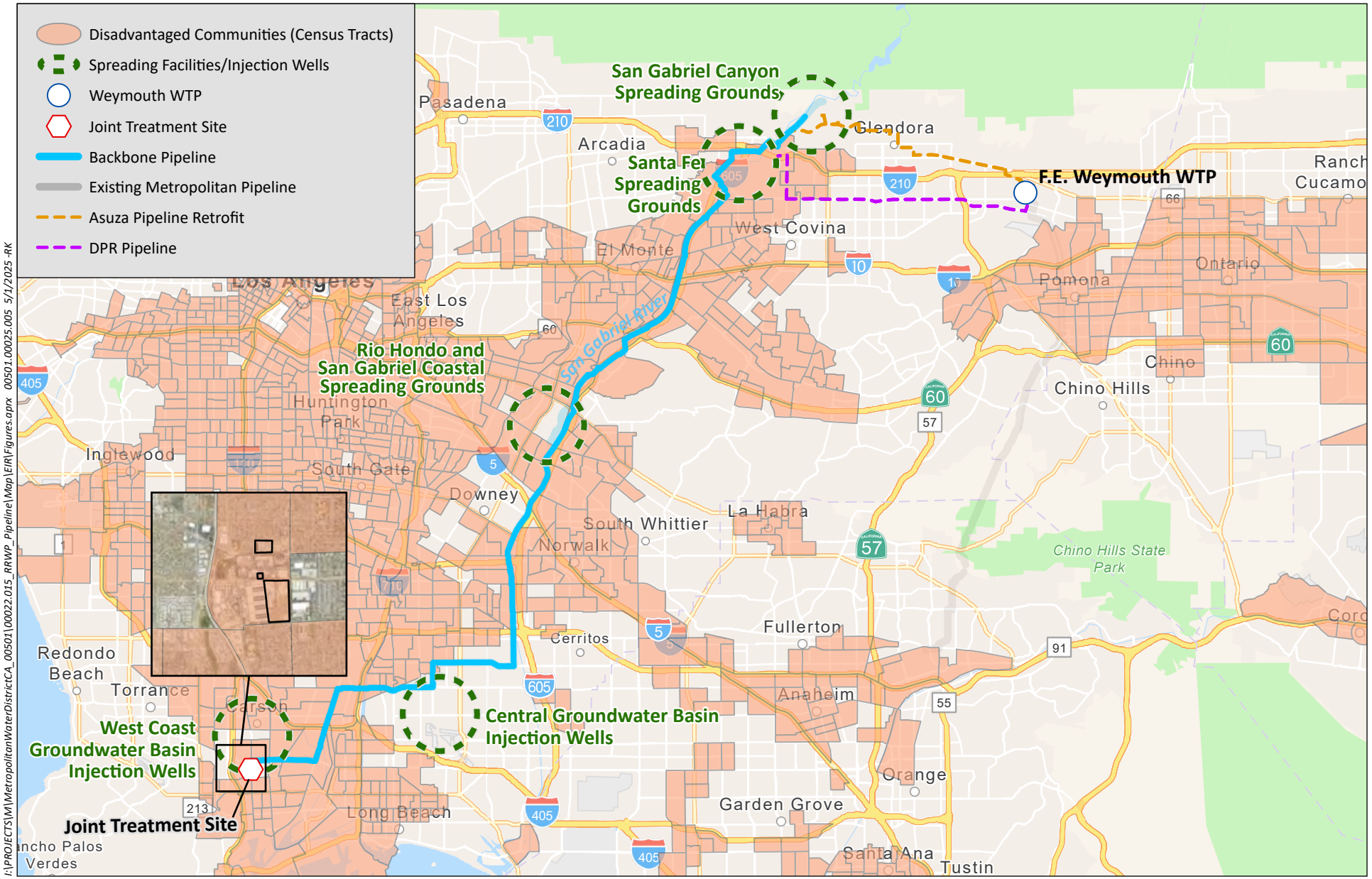
Air Quality

Construction of Pure Water would result in criteria and toxic air pollutant emissions from the operation of off-road construction equipment and on-road vehicles, and operation would result in emissions from treatment processes, generators, and on-road vehicles. Pure Water would comply with SCAQMD rules and regulations, which would help the SCAB meet national and state ambient air quality standards. Pure Water also includes environmental commitments and mitigation measures that would minimize air pollutant emissions, including **AQ-EC-1** (diesel engine idling), **AQ-EC-2** (fugitive dust control), **AQ-MM-1** (Tier 4 final off-road construction equipment), **AQ-MM-2** (alternative fuel construction equipment), **AQ-MM-3** (onsite power sources) and **AQ-MM-4** (electric vehicle charging stations). With these measures, Pure Water would not conflict with air quality-related general plan policies.

Environmental Justice

Pure Water's facilities and components would traverse numerous census tracts that are designated as disadvantaged communities, particularly in the cities of Carson, Norwalk, Santa Fe Springs, Pico Rivera, Industry, El Monte, Baldwin Park, and Irwindale (**Figure 5.9-1**). A disadvantaged community is defined by California Government Code Section 65302(h)(4)(A) as an area identified by CalEPA pursuant to Health and Safety Code Section 39711 or a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation. CalEPA formally identifies disadvantaged communities using the OEHHA California Communities Environmental Health Screening Tool (CalEnviroScreen; 2023), which includes 21 indicators that assess the pollution burden and population characteristics of all census tracts in the state to identify those most vulnerable to pollution and its effects. A CalEnviroScreen score of 75 or greater qualifies a census tract as a disadvantaged community. This score means the census tract is among the 25 percent most vulnerable and burdened by pollution in the state.

Potential environmental health-related impacts associated with implementation of Pure Water primarily include air quality, hazardous materials, and noise impacts that mainly arise during construction. Localized air pollutant emissions would be below applicable SCAQMD LSTs, and Pure Water would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors. It also would not expose sensitive receptors to substantial concentrations of TACs. Through implementation of **HAZ-EC-1** through **HAZ-EC-5**, construction and operation of Pure Water would not result in the exposure of the public or the environment to hazardous materials. Temporary noise



Source: Base Map Layer (Esri); Disadvantaged Communities Census Tracts (CalEnviroScreen 2022)

PURE WATER SOUTHERN CALIFORNIA

Disadvantaged Communities

Figure 5.9-1

generated during construction would be reduced to the extent feasible through implementation of Noise Control Plans per **NOI-MM-1.** Additional mitigation outlined in Section 5.10, *Noise*, would require noise generated by permanent aboveground facilities, namely treatment facilities and pump stations, to comply with applicable jurisdictional noise standards such that exposure to permanent excessive noise levels would not occur. As such, Pure Water would not conflict with environmental justice-related general plan policies.

Conclusion

As summarized above and detailed in Appendix H, Pure Water would not cause a significant environmental impact due to a conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be **less than significant**.

Project-Level Analysis

The Joint Treatment Site is located within the City of Carson and consistency with applicable policies of the City of Carson's General Plan is summarized below. This is followed by a summary of the backbone pipeline's consistency with the applicable general plan land use policies adopted for the purpose of avoiding or mitigating an environmental effect, organized according to the general plan element categories presented in Section 5.9.2. Analysis of consistency with each applicable policy is provided in Appendix H.

Joint Treatment Site

Land Use and Revitalization

The Warren Facility improvements and AWP Facility portions of the Joint Treatment Site have a land use designation of Heavy Industrial. The Heavy Industrial land use designation "is intended to provide for a full range of industrial uses that are acceptable within the community, but whose operations are more intensive and may have nuisance or hazardous characteristics, which for reasons of health, safety, environmental effects, or general welfare, are best segregated from other uses" (City of Carson 2023). Modifications to the existing Warren Facility and construction and operation of the AWP Facility would be consistent with the existing wastewater treatment uses at the site and the land use designation of Heavy Industrial. In accordance with the applicable general plan policy, these facilities would be screened from public view by walls near the property lines.

The Workforce Training Center portion of the Joint Treatment Site has a land use designation of Light Industrial[1]. The Light Industrial land use designation "is intended to provide for a wide variety of industrial uses and to limit those involving hazardous or nuisance effects…" (City of Carson 2023). Uses typical of this land use designation include manufacturing, research and development, and warehouse and distribution facilities, with additional uses permitted subject to criteria in the Zoning Ordinance. The Workforce Training Center would be operated to provide space for comprehensive training for various construction and metalworking trades, equipment operation, control system technicians, laboratory technicians, and general professional certification needs. These uses would be consistent with the land use designation of Light Industrial. Because the Workforce Training Center does not represent an

[1] Although the zoning designation for this property is currently Residential Agricultural, the City is in the process of updating its zoning code to be consistent with the General Plan designation.

industrial land use, it would not require a buffer of natural vegetation, open space, berms, or trees. The Workforce Training Center would provide a benefit to the community through the provision of job training and skills enhancement programs. As such, the facilities and components at the Joint Treatment Site would not conflict with general plan policies related to land use and revitalization.

Circulation

Vehicles accessing the Joint Treatment Site during construction and operations would primarily utilize Sepulveda Boulevard, Main Street, and Lomita Boulevard, all three of which are classified as Major Highways in the City of Carson General Plan (City of Carson 2023). Major Highways "are streets that carry both local and through traffic and are designed and operated to serve the highest volumes of vehicle traffic in the city. They provide limited access to adjacent land uses. Some major highways also function as multi-modal corridors that serve key transit routes, emergency response routes, provide dedicated pedestrian and/or bicycle facilities, and may also serve as truck routes" (City of Carson 2023). Sepulveda Boulevard, Main Street, and Lomita Boulevard each include four vehicle travel lanes (two lanes in each direction), include existing sidewalks on both sides of the roadway, and are designated as a truck route. Sepulveda Boulevard and Lomita Boulevard include existing bike lanes on both sides of the roadway. Bike lanes are proposed along Main Street. Once constructed, the AWP Facility would include ingress/egress points on both Main Street and Lomita Boulevard to accommodate material deliveries, staff trips, and visitor trips. Access to the Workforce Training Center would be provided along Sepulveda Boulevard. The access improvements would not substantially affect or alter the existing roadway geometry in a manner that would detract from operation of the roadways or inhibit future planned improvements (e.g., bike lanes along Main Street), as further discussed in Sections 5.11.5.1 and 5.11.5.3. Similarly, operation of facilities and components at the Joint Treatment Site would not involve a substantial number of daily vehicle trips to the site and would not therefore cause roadway deficiencies. As such, facilities and components at the Joint Treatment Site would not conflict with circulation-related general plan policies.

Community Character and Design

The City of Carson General Plan provides emphasis on certain community design areas, including the downtown core, neighborhood centers, employment centers, and greenway corridors. The Joint Treatment Site is located adjacent to a neighborhood center, an employment center, and a greenway corridor. The proposed development at the Joint Treatment Site would not impede or interfere with the implementation of improvements within these community design areas, as these areas do not include land within the Joint Treatment Site. Facilities and components at the Joint Treatment Site would be consistent in character with the existing Warren Facility. As such, facilities and components at the Joint Treatment Site would not conflict with general plan policies related to community character and design.

Recreation and Active Lifestyle

Proposed park and recreation facilities identified in the City of Carson General Plan near the Joint Treatment Site include a greenway corridor along Main Street, an expansion of the existing Carriage Crest Park along Sepulveda Boulevard, and a potential greenway buffer between the expanded Carriage Crest Park and Main Street. Greenway corridors are envisioned to be redeveloped as multi-modal boulevards with tree canopies and linear parks, medians, and/or trails running parallel to the street. Potential greenway buffers are sites between industrial uses and residential uses that have the potential for new greenery to provide a buffer between the two uses. The General Plan indicates that these buffers should include noise-mitigating techniques such as natural berms and open space.

The AWP Facility would be constructed adjacent to Main Street but would not be located within the ROW of Main Street and would therefore not preclude or conflict with implementation of the greenway corridor. The parcel containing the existing Carriage Crest Park, as well as the parcels to the east identified for the expansion of Carriage Crest Park and the greenway buffer, are owned by the Sanitation Districts. The City currently leases the 5-acre Carriage Crest Park parcel and 10-acre park expansion parcel from Sanitation Districts. The Workforce Training Center would not encroach upon the 10-acre park expansion parcel and would therefore not preclude or conflict with implementation of the park expansion. Pure Water proposes to provide purified water to this park, as well as Wilmington Athletic Club. The Workforce Training Center is proposed to be constructed on one of the parcels (the parcel immediately east of the Carriage Crest Park expansion parcel; refer to **Figure 2-2**) within which a potential greenway buffer is identified in the General Plan. The greenway buffer is required "[w]hen light or heavy industrial areas are redeveloped adjacent to existing residential neighborhoods" (City of Carson 2023). The Workforce Training Center would be a training center and not an industrial use; therefore, a greenway buffer would not be required. This intermediary use would provide a buffer and transition between the residential uses to the north and the industrial uses to the south, and would have the potential to provide noise attenuation for residential uses from noise generated at industrial uses. As such, the Workforce Training Center would be consistent with this policy and facilities at the components at the Joint Treatment Site would not conflict with general plan policies related to recreation and active lifestyle.

Community Health and Environmental Justice

The Joint Treatment Site is within a census tract identified as a disadvantaged community, per OEHHA's CalEnviroScreen. Pollution exposure primarily occurs in association with air quality, hazardous materials, and water quality. As detailed in Section 5.1, *Air Quality*, construction and operation of facilities and components at the Joint Treatment Site would result in emissions of TACs. In accordance with the applicable general plan policy, Pure Water would protect community health from pollution by toxics, especially in areas with vulnerable or sensitive populations. Localized emissions from construction and operation at the Joint Treatment Site would be below applicable SCAQMD LSTs, and construction and operation of facilities and components at the Joint Treatment Site would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors. These facilities would also not expose sensitive receptors to substantial concentrations of TACs during construction or operations.

The Joint Treatment Site overlaps the FORCO site, which has been previously associated with petroleum hydrocarbons affecting soil and groundwater. FORCO site remediation efforts are currently underway and would continue through construction of the AWP Facility (refer to Section 5.7, *Hazards and Hazardous Materials*). Initial site preparation activities at the AWP Facility site would include mass excavation and the removal of contaminated soils. **HAZ-EC-1** through **HAZ-EC-5** are included as part of Pure Water's design to avoid potential impacts related to exposure to hazardous materials during construction and operation. Thus, Pure Water would protect the local community from unhealthful pollutants related to hazardous materials.

Other topics covered in the Community Health and Environmental Justice Element of the City of Carson General Plan include public facilities and physical activity, safe and sanitary housing, community engagement and investment prioritization, access to healthy food, and climate resilience. The topics of public facilities and physical activity, safe and sanitary housing, and access to healthy food are generally not applicable to construction and operation of the facilities and components at the Joint Treatment Site. As for community engagement and investment prioritization, the Workforce Training Center would be constructed and operated to provide space for comprehensive training for various construction and metalworking trades, equipment operation, control system technicians, laboratory technicians, and general professional certification needs. The provision of the Workforce Training Center would directly contribute to achieving the goals in the Community Health and Environmental Justice Element related to community engagement and investment prioritization. Pure Water would also provide a climate-resilient water supply.

As such, the Joint Treatment Site would not conflict with general plan policies related to community health and environmental justice.

Community Services, Education and Safety

Construction and operation of facilities and components at the Joint Treatment Site would not induce substantial population growth in the area and would therefore not substantially increase demand on schools, community facilities, or public safety services or require the provision of new facilities. While construction of facilities and components at the Joint Treatment Site may temporarily affect access along Sepulveda Boulevard, Main Street, and Lomita Boulevard, a TCP/TMP would be implemented in accordance with **TRA-EC-1** to allow for continued adequate emergency response and evacuation. Potential safety concerns identified in the Community Services, Education and Safety Element include seismic, geologic, and soils hazards, flood hazards, and hazardous materials. As discussed in Section 5.5, potential seismic, geologic, and soils hazards at the Joint Treatment Site include seismic ground shaking, liquefaction, erosion, subsidence, and collapsible soils. In accordance with **GEO-EC-1**, a site-specific geotechnical investigation would be prepared for the Joint Treatment Site that would identify appropriate design and construction measures to accommodate potential risks associated with these hazards. The Joint Treatment Site is not within flood hazard, tsunami, or seiche zones, and would, therefore, not be subject to flood hazards. Figure 7-6 of the City of Carson General Plan identifies the AWP Facility site as a Cleanup Program Site. As discussed above for the Community Health and Environmental Justice Element, remediation efforts are currently underway at the site. In addition, **HAZ-EC-1** through **HAZ-EC-5** would be implemented to minimize potential impacts related to exposure to hazardous materials from mass excavation and removal of contaminated soils at the AWP Facility site as well as subsequent operational activities. As such, facilities and components at the Joint Treatment Site would not conflict with general plan policies related to community services, education, and safety.

Open Space and Environmental Conservation

The Open Space and Environmental Conservation Element provides guiding policies for sustaining and improving the quality of the natural environment as related to open space resources, biological resources, mineral resources, cultural resources, water quality, utilities, solid waste and recycling, air quality, and GHG reduction and climate change adaptation. The Joint Treatment Site is located within a highly developed area and contains developed land and disturbed habitat. No biological open space or sensitive biological resources are present within or adjacent to the Joint Treatment Site (see Section 5.2, *Biological Resources*). The Joint Treatment Site is also not identified as a potential mineral extraction

site. One potential cultural resource, a shall scatter (see Section 5.3), has been identified within the Joint Treatment Site; however, this resource appears to be a secondary deposit and has been subject to a great deal of disturbance. As such, this resource is recommended as not eligible for listing in the NRHP or CRHR. Since there is potential for currently unknown, buried archaeological resources to exist at the site, an Archaeological Monitoring Plan would be developed in accordance with **CUL-EC-1**. In addition, **CUL-MM-1** through **CUL-MM-4** and **TCR-MM-1** through **TCR-MM-3** would be implemented to avoid or minimize significant impacts to cultural resources (see Section 5.3) and Tribal Cultural Resources (see Section 5.12, *Tribal Cultural Resources*). If human remains are encountered, they would be addressed in accordance with the requirements specified by California Health and Safety Code Section 7050.5 and PRC Section 5097.98. Similarly, **PAL-MM-1** and **PAL-MM-2** would be implemented to ensure proper treatment of paleontological resources.

HYD-EC-1 and **HYD-EC-2** are included as part of Pure Water's design to minimize impacts to water quality. In accordance with **HYD-EC-1** and **HYD-EC-2**, SWPPPs and/or BMPs would be implemented during both construction and operation of facilities and components at the Joint Treatment Site so that potential contaminants do not get transported to downstream receiving waters. As related to utilities, purified water produced at the Joint Treatment Site would directly contribute to achieving goals set forth in the Open Space and Environmental Conservation Element regarding water supply and the utilization of recycled water. Similarly, the provision of solar panels at the Joint Treatment Site would be consistent with goals regarding renewable energy generation and storage. Operation of facilities and components at the Joint Treatment Site would not generate substantial amounts of solid waste that would exceed the capacity of local infrastructure.

As detailed in Section 5.1, construction and operation of the facilities and components at the Joint Treatment Site would result in emissions of criteria pollutants and TACs. Pure Water would comply with SCAQMD rules and regulations, which would help the SCAB meet national and state ambient air quality standards. It also incorporates environmental commitments **AQ-EC-1** and **AQ-EC-2** and **AQ-MM-1** through **AQ-MM-4** that would minimize air pollutant emissions. These measures would result in consistency with applicable local policies.

Pure Water would provide purified water from cleaned wastewater, which is a key element to improving sustainability throughout the region. It also would incorporate sustainable design features and measures provided in Metropolitan's CAP to reduce GHG emissions (refer to Section 5.6, *Greenhouse Gas Emissions*).

As such, facilities and components at the Joint Treatment Site would not conflict with general plan policies related to open space and environmental conservation.

Noise

Construction of facilities and components at the Joint Treatment Site would have the potential to generate elevated noise levels at nearby residential NSLUs located to its north, south, and east. In accordance with **NOI-MM-1** identified in Section 5.10, a Noise Control Plan would be implemented to reduce construction noise levels to below a level of significance. Additional mitigation outlined in Section 5.10 (**MM-NOI-2**) would require noise generated by operation of facilities and components at the Joint Treatment Site to comply with noise standards set forth in the City of Carson Municipal Code. This would be achieved through the provision of noise-attenuating features such as barriers and/or enclosures around noise-generating equipment. While the final design may include the use of sound

walls, such walls would be similar to the existing perimeter wall and would not contribute to significant aesthetic impacts. As such, facilities and components at the Joint Treatment Site would not conflict with noise-related general plan policies.

Economic Development

The construction and operation of facilities and components at the Joint Treatment Site would be consistent with the Economic Development Element objective related to the diversification of industries with a focus on promoting high-quality employment opportunities. At its full capacity of 150 MGD, the AWP Facility would require approximately 194 permanent staff. The Joint Treatment Site would also include a Workforce Training Center that would provide space for comprehensive training for various construction and metalworking trades, equipment operation, control system technicians, laboratory technicians, and general professional certification needs. The provision of the Workforce Training Center would directly contribute to objectives in the Economic Development Element related to workforce development in the community. As such, facilities and components at the Joint Treatment Site would not conflict with general plan policies related to economic development.

Backbone Pipeline

The backbone pipeline would span numerous jurisdictions as listed in **Table 5.9-1**. and has been assessed for consistency with the applicable general plan land use policies adopted for the purpose of avoiding or mitigating an environmental effect. Analysis of consistency with each applicable policy is provided in Appendix H. The analysis is summarized in this section, organized according to the general plan element categories presented in Section 5.9.2.

Land Use

The backbone pipeline would be routed along public roadways and in ROWs situated along the San Gabriel River that are currently held by SCE, LADWP, LACFCD, USACE, and private parties. Land uses adjacent to the backbone pipeline predominantly include residential uses, interspersed commercial uses, and industrial uses in the cities of Carson and Irwindale. Open space and recreational uses are also located along the San Gabriel River channel. Upon completion of construction, the backbone pipeline would be located underground, and disturbed land would be restored to pre-existing conditions. Installation of the backbone pipeline would not result in permanent changes to land use or otherwise conflict with land use plans or policies adopted for the purpose of avoiding or mitigating an environmental effect.

Circulation

The backbone pipeline would be constructed within public roadways primarily using trenching methods, which would require lane, street, and/or intersection closures. Trenchless/tunneling methods would be used, as necessary, to avoid major intersections and cross streets, including freeways. As discussed in Section 5.11, **TRA-EC-1**, which involves implementation of a TCP/TMP, would be included to allow for continued adequate circulation during construction of the pipelines within roadways. Once constructed, the backbone pipeline would be located underground, and disturbed roadways would be restored to pre-existing conditions. Installation of the backbone pipeline would therefore not permanently affect circulation. As such, the backbone pipeline would not conflict with circulation-related general plan policies.

Community Design

The backbone pipeline would be located underground and areas disturbed during construction would be restored to pre-existing conditions. Therefore, the backbone pipeline would not affect community design or community character and would not conflict with general plan policies related to community design.

Housing

The backbone pipeline would not result in the removal of existing housing. As such, the backbone pipeline would not conflict with housing-related general plan policies.

Recreation

Much of the backbone alignment would be located within roadways and therefore would not have the potential to affect recreational facilities. Portions of the backbone pipeline, however, would extend through linear parks located within utility easements along the San Gabriel River. The northernmost portion of the pipeline would be located adjacent to the San Gabriel River Trail. Construction of the backbone pipeline in these areas, specifically when trenching methods are used, would result in temporary partial or full removal of these facilities. Upon completion of construction, disturbed land would be restored to pre-existing conditions, and these recreational facilities would be replaced. As such, the backbone pipeline would not result in a conflict with plans or policies related to recreation.

Conservation

Pure Water's facilities and components would predominantly be located within urbanized and developed areas where natural resources are generally not present. Natural resources are present, however, along the portion of the backbone alignment that parallels the San Gabriel River. Such resources include biological resources (e.g., sensitive vegetation communities, special-status plant and animal species, and jurisdictional waters and wetlands), water resources (e.g., the San Gabriel River), soil resources, and mineral resources. As discussed in detail in Section 5.2, construction of the backbone pipeline would have potentially significant direct and indirect impacts on sensitive vegetation communities, special-status plant and animal species, and jurisdictional waters and wetlands. Through implementation of **GM-EC-1**, **AQ-EC-2**, **BIO-EC-1** through **BIO-EC-4**, **HYD-EC-1,** and mitigation measures **BIO-MM-1** through **BIO-MM-25** identified in Section 5.2, impacts would be avoided or reduced to less-than-significant levels. Once the backbone pipeline is installed, disturbed areas would be restored to pre-existing conditions.

As discussed in Section 5.8, construction of the backbone pipeline would have the potential to result in erosion of excavated soils and temporarily stockpiled soils, which could affect water quality downstream. In accordance with **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion and sedimentation. Construction of the backbone pipeline across the San Gabriel River and other major concentrated flow conveyances would be accomplished via trenchless methods, which would minimize the potential for erosion and sedimentation in major waterways.

Mapped mineral resource zones occur along the northern portion of the backbone alignment in the cities of El Monte, Irwindale, and Azusa. In addition, past and current mineral extraction uses are present in the immediate vicinity of the backbone alignment in the City of Irwindale. The City of

Irwindale has adopted a quarry designation in its zoning code that is used to indicate areas where quarries and related sand and gravel industries are allowed to be located. The backbone alignment does not cross through land designated as being within the quarry zone and implementation of the backbone pipeline would not result in loss in the availability of mineral resources (refer to Section 6.3, *Mineral Resources*, for additional discussion).

As such, Pure Water would not conflict with conservation-related general plan policies.

Open Space

Much of the backbone pipeline would be located within highly urbanized areas where open space is generally not present. The open space that is present along the backbone alignment includes the San Gabriel River corridor, Whittier Narrows Recreation/Natural Area, and Santa Fe Dam Recreation Area. These areas provide natural habitat and recreation opportunities. While the backbone pipeline would be located near the Whitter Narrows Recreation/Natural Area and Santa Fe Dam Recreation Area, it would not be constructed or affect resources within either recreation area. Within the San Gabriel River corridor, construction of the backbone pipeline would temporarily affect natural habitats and access to recreational facilities. Upon completion of construction, disturbed areas would be restored to pre-existing conditions. Pure Water would not result in the permanent loss of open space. Short-term construction activities within open space would not result in a land use policy conflict.

Historic Preservation

Construction of the backbone pipeline has the potential to affect both currently identified historical and archaeological resources, as well as those that have not yet been identified. Mitigation measures **CUL-MM-1** through **CUL-MM-4** identified in Section 5.3 would require the assessment of these resources and, if found eligible, the appropriate treatment of the resources. With these measures, the backbone pipeline would be consistent with general plan policies related to historic preservation.

Noise

Construction of the backbone pipeline would generate elevated noise levels at nearby NSLUs. In accordance with **NOI-MM-1** identified in Section 5.10, Noise Control Plans would be implemented to reduce construction noise levels to the extent feasible. Several local jurisdictions have adopted policies and/or regulations related to limitations on construction hours and/or limitations on the amount of noise produced by construction activities, which would be exceeded by construction of the backbone pipeline. While environmental commitments and the mitigation measure would lessen the impacts from these exceedances, the noise impacts would still be potentially significant and unavoidable. This short-term policy conflict represents a noise, rather than a land use, impact, and is fully addressed in Section 5.10.

Public Services and Facilities

Construction and operation of the backbone pipeline would not induce substantial population growth in the area and would therefore not substantially increase demand for public services and facilities or require the provision of new facilities. While construction of the backbone pipeline may temporarily affect access along roadways within which the pipeline would be located, a TCP/TMP would be implemented in accordance with **TRA-EC-1** to allow for continued adequate emergency response and

evacuation. As such, the backbone pipeline would not conflict with general plan policies related to public services and facilities.

Safety

Potential safety concerns typically identified in safety elements include fires, floods, seismic hazards, and hazardous materials. The backbone pipeline would traverse through a VHFHSZ west and north of the Santa Fe Dam Recreation Area. The first onsite construction activity for the backbone pipeline would involve clearing of vegetation as part of site preparation activities, which would result in the removal of potentially flammable vegetation. Removal of this vegetation and provision of fire extinguishers on site would minimize potential risks associated with the use of equipment with combustion engines. As such, construction would not exacerbate fire risks or exposure people to risks from wildfire.

The backbone pipeline would cross the FEMA 100-year floodplain at multiple locations, including the Dominguez Channel, Compton Creek, Los Angeles River, and San Gabriel River (see Section 5.8). These crossings would be conducted using trenchless construction methods, which would minimize the potential impacts related to flood hazards. Potential seismic hazards present in the Pure Water area, including fault rupture, strong seismic ground shaking, and liquefaction, would have the potential to affect the integrity of the backbone pipeline, which could result in flooding if the facilities were to rupture and result in uncontrolled release of water. As discussed in Section 5.5, resiliency of the pipeline for a given seismic event would be considered during design and construction. In accordance with **GEO-EC-1**, site-specific geotechnical investigations would be conducted that would inform appropriate design and construction measures to accommodate potential seismic hazards, pursuant to applicable industry/regulatory standards (e.g., the IBC/CBC and/or Greenbook).

Construction of the backbone pipeline would require the use of typical hazardous materials. Metropolitan and its construction contractor(s) would comply with applicable federal, state, and local regulations pertaining to hazardous materials use, handling, storage, and disposal. The backbone pipeline would cross several hazardous materials sites/properties. Through implementation of **HAZ-EC-2** (SSSP), **HAZ-EC-3** (Hazardous Materials Management Plan), **HAZ-EC-4** (utility location survey), and **HAZ-EC-5** (demolition evaluations), construction would not result in the exposure of construction workers, the public, and/or the environment to hazardous materials.

As such, the backbone pipeline would not conflict with safety-related general plan policies.

Economic Development

Construction of the backbone pipeline would result in the creation of jobs for the local workforce, thereby contributing to the region's economic development, as described in the above *Program-Level Analysis*.

Air Quality

Construction of the backbone pipeline would result in air pollutant emissions from the operation of off-road construction equipment and on-road vehicles. Pure Water would comply with SCAQMD rules and regulations, which would help the SCAB meet national and state ambient air quality standards. Pure Water also includes environmental commitments and mitigation measures that would minimize air pollutant emissions from backbone pipeline construction, including **AQ-EC-1** (diesel engine idling), **AQ-EC-2** (fugitive dust control), **AQ-MM-1** (Tier 4 final off-road construction equipment), **AQ-MM-2**

(alternative fuel construction equipment), and **AQ-MM-3** (onsite power sources). These measures would result in consistency with applicable local policies. Air pollutant emissions from operation of the backbone pipeline would be negligible and would comply with applicable policies and regulations. As such, the backbone pipeline would not conflict with air quality-related general plan policies.

Environmental Justice

The backbone pipeline would traverse numerous census tracts that are designated as disadvantaged communities as defined by Government Code Section 65302(h)(4)(A), specifically in the cities of Carson, Norwalk, Sante Fe Springs, Pico Rivera, Industry, El Monte, Baldwin Park, and Irwindale (**Figure 5.9-1**). Potential environmental health-related impacts associated with implementation of Pure Water primarily include air quality, hazardous materials, and noise impacts. As mentioned above under *Air Quality*, localized air pollutant emissions would be below applicable SCAQMD LSTs, and Pure Water would not result in exposure of sensitive receptors to substantial localized concentrations of criteria pollutants and precursors. It also would not expose sensitive receptors to substantial concentrations of TACs. Through implementation of **HAZ-EC-1** through **HAZ-EC-5**, construction and operation of Pure Water would not result in the exposure of the public or the environment to hazardous materials. Temporary noise generated during construction would be reduced to the extent feasible through implementation of Noise Control Plans per **NOI-MM-1.** As such, the backbone pipeline would not conflict with environmental justice-related general plan policies.

Conclusion

Proposed construction and operation of facilities and components at the Joint Treatment Site and the backbone pipeline would not cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be **less than significant**.

5.9.6 Level of Significance Before Mitigation

Impacts associated with the physical division of an established community and conflict with land use plans, policies, or regulations would be **less than significant**.

5.9.7 Mitigation Measures

Impacts associated with land use and planning would be less than significant; therefore, no mitigation is required.

5.9.8 Level of Significance After Mitigation

As described above, impacts associated with land use and planning would be **less than significant without mitigation**.

5.9.9 References

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5.10 NOISE

This section addresses the potential noise and vibration impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts with and without mitigation. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

NOISE LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations	No
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

The program-level analysis is based on readily available, general information derived from applicable resource and planning documents, as well as in part on the information, data, assumptions, and methodologies presented in the Noise Technical Report (HELIX 2025; Appendix I). The project-level analysis further considers and is based on the Noise Technical Report prepared for the Joint Treatment Site and backbone pipeline (HELIX 2025; Appendix I). The analysis presented in this section is specific to human receptors; potential noise impacts to wildlife are addressed in Section 5.2, *Biological Resources.*

5.10.1 Existing Conditions

5.10.1.1 Noise and Sound Level Descriptors

Sound can be described as vibrations that travel through the air and can be heard when they reach a person's ear. Noise is defined as loud, unexpected, or annoying sound. Sound becomes unwanted when it interferes with normal activities, causes actual physical harm, or has adverse effects on health. All noise-level or sound-level values presented in this section are expressed in terms of decibels with A-weighting (dBA) to approximate the hearing sensitivity of humans. **Table 5.10-1** compares common activities and their noise levels (dBA). Under the decibel scale, a doubling of sound energy corresponds to an increase of 3 dBA. Time-averaged noise levels are expressed as "L_{EQ}." L_{EQ} represents the average of

the noise levels occurring over a specified period. Unless a different time period is specified, L_{EQ} implies a period of one hour.

The Community Noise Equivalent Level (CNEL) is a metric used to assess community noise exposure, representing the average noise level over a 24-hour period while giving extra weight to evening noise. CNEL is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This weighting reflects the increased sensitivity of residents to noise during evening hours, highlighting the importance of considering community impacts when evaluating noise pollution. This is similar to the Day Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on noise levels during the same nighttime hours but no added weighting on the noise levels during evening hours.

Table 5.10-1
TYPICAL A-WEIGHTED NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: Caltrans 2013
dBA = A-weighted decibels

5.10.1.2 Existing Noise Environment

The Pure Water area is highly developed, predominately consisting of residential, commercial, recreational/open space, and industrial land uses. The primary source of existing noise in the Pure Water area is vehicular traffic along freeways and major roadways.

Ambient noise, also known as background noise, is the existing sound that is present in an environment. Examples of ambient noise include traffic, electronic devices, wind, and dogs barking. Ambient noise measurements were conducted near the Joint Treatment Site and along the backbone alignment. In the vicinity of the Joint Treatment Site, noise levels ranged from 65 to 77 dBA during daytime hours (7:00 a.m. to 7:00 p.m.) and 59 to 65 dBA during nighttime hours (7:00 p.m. to 7:00 a.m.). Along the backbone alignment, noise levels ranged from 51 to 79 dBA during daytime hours and 40 to 76 dBA during nighttime hours. Refer to Appendix I for additional information on measured ambient noise levels.

5.10.1.3 Noise-Sensitive Land Uses

Noise-sensitive land uses (NSLUs) are areas that may be subject to stress and/or interference from excessive noise and vibration, including residences, hospitals, schools, libraries, or similar facilities where noise reduction is beneficial.

5.10.1.4 Groundborne Vibration

Groundborne vibration consists of oscillatory waves that move from a source through the ground to adjacent structures. Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source (Caltrans 2020). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. If amplitudes are high enough, groundborne vibration has the potential to damage structures and cause cosmetic damage (e.g., crack plaster). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never perceived as annoying to people who are outdoors (FTA 2018). The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

5.10.2 Regulatory Framework

5.10.2.1 State

California Government Code

Section 53091(d) of the California Government Code states building ordinances of a county or city do not apply to the location or construction of facilities for the production, generation, storage, treatment or transmission of water or wastewater. In addition, Section 53091(e) of the code states that zoning

ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water. As a regional public water purveyor and utility, Metropolitan is therefore exempt from local zoning and building ordinances. In addition, Pure Water includes treatment and transmission of water, thereby exempting the program from these ordinances.

5.10.2.2 Local Regulations

The Pure Water facilities and components would be located across multiple jurisdictions, each with its own regulations related to construction and/or operational noise. Typically, a jurisdiction's municipal code regulates noise generation while the General Plan regulates land use compatibility related to noise. The Joint Treatment Site is located entirely within the City of Carson. Although Pure Water facilities and components would not be located within the City of Los Angeles, the Joint Treatment Site would be located adjacent to the boundary between the City of Carson and the City of Los Angeles, with the nearest NSLUs to the Joint Treatment Site within the City of Los Angeles. The City of Los Angeles jurisdiction begins south of Lomita Avenue, across the street from the Joint Treatment Site's southern boundary. The backbone conveyance system would be constructed in 15 separate cities and within unincorporated County of Los Angeles. Summaries of the local construction and operational noise regulations for these various jurisdictions are provided in **Table 5.10-2** and **Table 5.10-3**, respectively.

Table 5.10-2
SUMMARY OF LOCAL CONSTRUCTION NOISE REGULATIONS

Jurisdiction	Applicable Hours[1]	Applicable Construction Period[2]	Applicable Land Use	Temporary Noise Level Limit
County of Los Angeles/City of Carson[4]	7:00 a.m. to 8:00 p.m.	Short-term	Residential (single-family)	75 dBA L_{EQ} (12 hour)
			Residential (multi-family)	80 dBA L_{EQ} (12 hour)
			Semi-residential/Commercial	85 dBA L_{EQ} (12 hour)
		Long-term	Residential (single-family)	60 dBA L_{EQ} (12 hour)
			Residential (multi-family)	65 dBA L_{EQ} (12 hour)
			Semi-residential/Commercial	70 dBA L_{EQ} (12 hour)
	8:00 p.m. to 7:00 a.m.	Short-term	Residential (single-family)	60 dBA L_{EQ} (12 hour)
			Residential (multi-family)	64 dBA L_{EQ} (12 hour)
			Semi-residential/Commercial	70 dBA L_{EQ} (12 hour)
		Long-term	Residential (single-family)	50 dBA L_{EQ} (12 hour)
			Residential (multi-family)	55 dBA L_{EQ} (12 hour)
			Semi-residential/Commercial	60 dBA L_{EQ} (12 hour)
City of Azusa	7:00 a.m. to 6:00 p.m.	All	N/A	N/A
City of Baldwin Park	7:00 a.m. to 7:00 p.m.	All	N/A	N/A
City of Bellflower	7:00 a.m. to 6:00 p.m.	All	N/A	N/A
City of Cerritos	7:00 a.m. to 7:00 p.m.	All	N/A	N/A
City of Downey	7:00 a.m. to 9:00 p.m.	All	All	85 dBA L_{EQ} (1 hour)
City of Duarte	7:00 a.m.to 10:00 p.m.	All	500 feet of residential zone	N/A
City of Industry[3]	N/A	N/A	N/A	N/A
City of Irwindale	7:00 a.m. to 7:00 p.m.	All	N/A	N/A
City of Lakewood	7:00 a.m. to 7:00 p.m.	All	N/A	N/A
City of Long Beach	7:00 a.m. to 7:00 p.m.	All	N/A	N/A
City of Los Angeles[5]	9:00 p.m. to 7:00 a.m.	All	500 feet of residential zone	75 dBA L_{MAX} at 50 feet

Jurisdiction	Applicable Hours[1]	Applicable Construction Period[2]	Applicable Land Use	Temporary Noise Level Limit
City of Norwalk	7:00 a.m. to 6:00 p.m.	All	N/A	N/A
City of Pico Rivera	7:00 a.m. to 7:00 p.m.	All	500 feet of NSLU	N/A
City of Santa Fe Springs	7:00 a.m. to 7:00 p.m.	All	500 feet of NSLU	N/A
City of Whittier	7:00 a.m. to 6:00 p.m.	All	N/A	N/A

[1] Applicable hours indicate the hours when construction noise is not prohibited, per each jurisdiction's municipal code or General Plan, if applicable. Hours may vary by day of week and by holidays, depending on jurisdiction. Hours listed in this table apply to typical weekdays.

[2] Short-term is defined in the County of Los Angeles as a duration of 9 days or fewer. The City of Carson defines this period as 20 days or fewer. Long-term is defined as work occurring longer than the short-term period.

[3] The City of Industry does not set construction noise limits in its municipal code or General Plan.

[4] The City of Carson has adopted the Los Angeles County Noise Control Ordinance except as amended by Municipal Code Section 5502.

[5] Although Pure Water components are not located within the City of Los Angeles, the Joint Treatment Site would be located adjacent to the boundary between the City of Carson and the City of Los Angeles, with the nearest NSLUs to the Joint Treatment Site within the City of Los Angeles.

N/A = not applicable; indicates that the jurisdiction has not set an applicable land use for restrictions or numerical construction noise limit; NSLU = Noise-sensitive land use; dBA = A-weighted decibels; L_{EQ} = time-averaged noise level

Table 5.10-3
SUMMARY OF LOCAL OPERATIONAL NOISE REGULATIONS

Jurisdiction	Land Uses	Exterior Noise Level Limit	Other Applicable Standards
City of Azusa	Residential, Transient Lodging, Hospitals, Extended Care, Meeting Facility, Offices, School, Library, Park, Museum	65 dBA L_{DN}	• Ambient noise level applies if it exceeds the standard
	Playground, Park	70 dBA L_{DN}	
City of Baldwin Park	Single-family Residential	55 dBA 7am-10pm 45 dBA 10pm-7am	N/A
	Multi-family Residential	60 dBA 7am-10pm 55 dBA 10pm-7am	
	Commercial	65 dBA 7am-10pm 60 dBA 10pm-7am	
	Industrial	70 dBA any time	
City of Bellflower	N/A		• Prohibits noise audible to the human ear at a distance exceeding 200 feet from the property line of a noise source in a residential zone or within 500 feet of a residential zone • Prohibits any loud, unnecessary, and unusual noise that disturbs the peace or quiet of any neighborhood or that causes discomfort or annoyance to any reasonable person of normal sensitiveness

Jurisdiction	Land Uses	Exterior Noise Level Limit	Other Applicable Standards
City of Carson[1]	Noise-sensitive area	45 dBA any time	• If the highest hourly ambient noise level exceeds the exterior noise limits during daytime and nighttime hours at receiver locations, the ambient noise level shall be the standard.
	Residential	50 dBA 7am-10pm 45 dBA 10pm-7am	
	Commercial	60 dBA 7am-10pm 55 dBA 10pm-7am	
	Industrial	70 dBA any time	
City of Cerritos	Residential and Agricultural	50 dBA	• May exceed ambient noise by 5 dBA if ambient exceeds the noted limits
	Commercial	60 dBA	
	Industrial	70 dBA	
City of Downey	Residential	55 dBA 7am-10pm 45 dBA 10pm-7am	• Noise exceeding 5 dBA above considered a public nuisance ambient noise levels are
	Commercial	65 dBA any time	
	Manufacturing	70 dBA any time	
City of Duarte	Single-/Two-family Residential	55 dBA 7am-9pm 45 dBA 9pm-7am	N/A
	Multiple-family Residential	55 dBA 7am-9pm 50 dBA 9pm-7am	
	Commercial	60 dBA 7am-9pm 55 dBA 9pm-7am	
	Industrial and Light Manufacturing	70 dBA anytime	
City of Industry	N/A		
City of Irwindale	Residential	50 dBA 7am-10pm 45 dBA 10pm-7am	• Violation occurs if noise exceeds ambient or the noted limit by more than 10 dB
	Commercial	55 dBA 7am-10pm 50 dBA 10pm-7am	
	Industrial	70 dBA 7am-10pm 60 dBA 10pm-7am	
City of Lakewood	Residential	60 dBA	• Violation occurs if noise exceeds the standard by more than 5 dBA • Mechanical equipment shall not be installed within a residential zone unless it is determined by the Director of Community Development that the installation of such equipment would not interfere with the residential land use
City of Long Beach	District One (predominantly residential)	50 dBA 7am-10pm 45 dBA 10pm-7am	• May exceed ambient noise by 5 dBA if ambient exceeds the noted limits
	District Two (predominantly commercial)	60 dBA 7am-10pm 55 dBA 10pm-7am	
	District Three (predominantly industrial)	65 dBA any time	
	District Four (predominantly industrial)	70 dBA any time	

Jurisdiction	Land Uses	Exterior Noise Level Limit	Other Applicable Standards
City of Los Angeles[2]	All	N/A	• Violation occurs if noise exceeds ambient by 5 dB at occupied properties
City of Norwalk	Residential	55 dBA 7am-10pm 45 dBA 10pm-7am	• Violation occurs if average noise level exceeds ambient noise level at property line of any residential land by more than 5 dBA
	Commercial	60 dBA any time	
	All other zones	65 dBA any time	
City of Pico Rivera	N/A		• Prohibits unnecessary noises or sounds that are physically annoying to persons of ordinary sensitiveness, or that are so harsh, prolonged, unnatural, or unusual as to cause physical discomfort to inhabitants of any neighborhood
City of Santa Fe Springs[3]	Church, School, Hospital	45 dBA any time	• If ambient noise level exceeds standard, permissible noise level is the ambient level
	Light Agricultural, Residential	50 dBA 7am-10pm 45 dBA 10pm-7am	
	Commercial	60 dBA 7am-10pm 55 dBA 10pm-7am	
	Limited Manufacturing, Public Use Facilities, Buffer Parking	60 dBA any time	
	Manufacturing	70 dBA any time	
City of Whittier	N/A		• Prohibits excessive or unreasonable noise, which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.
County of Los Angeles[3]	Noise-sensitive area	45 dBA any time	• If the highest hourly ambient noise level exceeds the exterior noise limits during daytime and nighttime hours at receiver locations, the ambient noise level shall be the standard.
	Residential	50 dBA 7am-10pm 45 dBA 10pm-7am	
	Commercial	60 dBA 7am-10pm 55 dBA 10pm-7am	
	Industrial	70 dBA any time	

Note: Table presents a summary of applicable noise standards; refer to Appendix I for details.

[1] Standards presented are the permitted sound level for a maximum of 15 minutes in a 30-minute period.

[2] Although Pure Water components are not located within the City of Los Angeles, the Joint Treatment Site would be located adjacent to the boundary between the City of Carson and the City of Los Angeles, with the nearest NSLUs to the Joint Treatment Site within the City of Los Angeles.

[3] Standards presented are the permitted sound level for a maximum of 30 minutes in 1 hour.

N/A = not applicable; dBA = A-weighted decibels

Although the California Government Code Section 53091 exempts Metropolitan as a regional public water purveyor and utility from local zoning and building ordinances (but not from noise ordinances that are outside of the zoning and building ordinances), for purposes of disclosure, this assessment analyzes potential noise impacts of Pure Water.

5.10.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to noise and vibration. Pure Water would have a significant impact if it would:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

2. Generate excessive groundborne vibration or groundborne noise levels; or

3. For a project located within the vicinity of a private airstrip or 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, expose people residing or working in the project area to excessive noise levels.

Details regarding the application of these three significance thresholds to the analysis of Pure Water's impacts are described in the following sections.

5.10.3.1 Threshold 1: Increase in Ambient Noise

Construction

As a regional public water purveyor and utility, Metropolitan is exempt from local zoning and building ordinances, through which noise standards and limitations typically are enforced (Government Code Section 53091). Nonetheless, for purposes of disclosure, this assessment analyzes potential noise impacts during construction of Pure Water.

Local agency planning documents and noise ordinances are often referenced as the basis for noise thresholds to analyze potential impacts to NSLUs from construction and operation of a project. However, for the purposes of this analysis, Metropolitan decided to establish a uniform construction noise impact threshold for the following two reasons. First, 13 of the 16 jurisdictions where Pure Water's facilities and components would be located have no specified numerical construction noise limits, and the City of Carson's noise thresholds are based on (and slightly less restrictive than) those from the County of Los Angeles. Second, there are significant advantages to utilizing a uniform noise impact threshold. Specifically, it allows such impacts to be addressed consistently and equitably across multiple jurisdictions and facilitates future implementation of noise control measures during construction activities.

Accordingly, the construction noise thresholds used for Pure Water include modified standards based on Section 12.08.440 of the County of Los Angeles Noise Ordinance. The thresholds exclude the multi-family residential and semi-residential/commercial construction noise limits and instead use the County's single-family residential thresholds for all NSLUs, which is a more conservative threshold. This provides for equitable analysis of the various types of residential land uses and considers NSLUs such as schools and hospitals. The noise thresholds used for this analysis are found in **Table 5.10-4**.

Table 5.10-4
SUMMARY OF PURE WATER CONSTRUCTION NOISE THRESHOLDS

Jurisdiction	Applicable Hours[1]	Applicable Construction Period/Type[1]	Applicable Land Use	Temporary Noise Level Limit
All Jurisdictions	7:00 a.m. to 7:00 p.m. (Daytime)	Short-term	NSLU	75 dBA L_{EQ} (12 hour)
		Long-term	NSLU	60 dBA L_{EQ} (12 hour)
	7:00 p.m. to 7:00 a.m. (Nighttime)	Short-term	NSLU	60 dBA L_{EQ} (12 hour)
		Long-term	NSLU	50 dBA L_{EQ} (12 hour)

[1] Short-term is defined in the County of Los Angeles as a duration of 9 days or fewer. Long-term is defined as work occurring longer than the short-term period. (Section 12.08.440 of the County of Los Angeles Code of Ordinances)
NSLU = Noise-sensitive land uses. Includes residential land uses, places where people sleep (e.g., hospitals, hotels), and other institutional facilities (e.g., schools, day care centers, libraries).
dBA = A-weighted decibels; L_{EQ} = time-averaged noise level

A temporary or periodic increase in ambient noise levels due to construction of Pure Water's facilities and components would be considered significant if noise generated by construction equipment exceeds the noise levels listed in **Table 5.10-4** above. For daytime work, short-term construction impacts would be significant if noise levels at the receptor exceed 75 dBA L_{EQ} (12-hour average), or if long-term construction noise levels exceed 60 dBA L_{EQ} (12-hour average). Nighttime work construction noise levels would be significant if short-term construction noise levels at the receptor exceeds 60 dBA L_{EQ} (12-hour average) or if long-term construction noise exceeds 50 dBA L_{EQ} (12-hour).

In addition to the thresholds listed above, construction noise that exceeds the existing ambient noise levels of a given construction area by 5 dBA L_{EQ} (12-hour average), which is considered a readily perceptible increase in noise levels at nearby sensitive receptors, would be considered significant.

Operations

For the purposes of analyzing operational noise impacts associated with Pure Water, Metropolitan would utilize the thresholds adopted by each of the 16 applicable local jurisdictions (**Table 5.10-3**). Each of Pure Water's operational noise-generating facilities and components would be subject to the thresholds adopted by the jurisdiction within which it is located. If noise levels exceed the operational noise thresholds of those jurisdictions, impacts would be considered significant.

Operational noise associated with the Joint Treatment Site is subject to the City of Carson Noise Ordinance. The City of Carson Noise Ordinance adopts the standards from the Los Angeles County Code for operational noise, which specifies the allowable operational sound level exposure criteria pertaining to exterior noise levels (**Table 5.10-3**)**.**

Chapter 12.08.390 of the Los Angeles County Code also states that if the highest hourly ambient noise level exceeds the set criteria in **Table 5.10-3** during daytime and nighttime hours at receiver locations, the ambient noise level shall be the standard. To assess ambient noise conditions, a total of three long-term noise measurements were conducted near residential and commercial receiver locations

surrounding the Joint Treatment Site that were considered in this analysis (**Figure 5.10-1**)**.** These measurements indicated that the existing ambient noise levels at receiver locations R1 through R5, R9, R10, and C1 exceeded the noise level criteria specified by the Los Angeles County Code (**Table 5.10-3**). As such, the applicable noise limit criteria for these receiver locations are the highest hourly measured ambient noise levels for daytime and nighttime periods. Since the noise created at the Joint Treatment Site would be continuous, long-term noise, this analysis conservatively utilizes the average (as opposed to the highest hourly) existing ambient daytime and nighttime noise levels to determine specific noise level criteria for daytime and nighttime thresholds. No ambient noise data are available for receiver locations R6 through R8 because private property access was not available; therefore, the noise level criteria specified by the Los Angeles County Code are the applicable noise thresholds for these receivers for the purpose of this analysis. **Table 5.10-5** summarizes the specific noise level criteria for the Joint Treatment Site facilities at individual receiver locations. If noise levels from operation of the Joint Treatment Site facilities, in combination with existing ambient noise levels, exceed these thresholds, impacts would be considered significant.

Table 5.10-5
SUMMARY OF PURE WATER OPERATIONAL NOISE THRESHOLDS AT JOINT TREATMENT SITE

Receiver Location	Daytime[1] Noise Level Threshold (dBA L_{50})	Nighttime[2] Noise Level Threshold (dBA L_{50})	Basis for Threshold
R1	72	65	Ambient measurement[3]
R2	72	65	Ambient measurement[3]
R3	72	65	Ambient measurement[3]
R4	72	65	Ambient measurement[3]
R5	72	65	Ambient measurement[3]
R6	50	45	Los Angeles County Code[4]
R7	50	45	Los Angeles County Code[4]
R8	50	45	Los Angeles County Code[4]
R9	65	59	Ambient measurement[3]
R10	65	59	Ambient measurement[3]
C1	72	65	Ambient measurement[3]

1 Daytime hours are defined as those between 7:00 a.m. and 10:00 p.m.

2 Nighttime hours are defined as those between 10:00 p.m. and 7:00 a.m.

3 Based on the average measured noise levels of the daytime and nighttime periods.

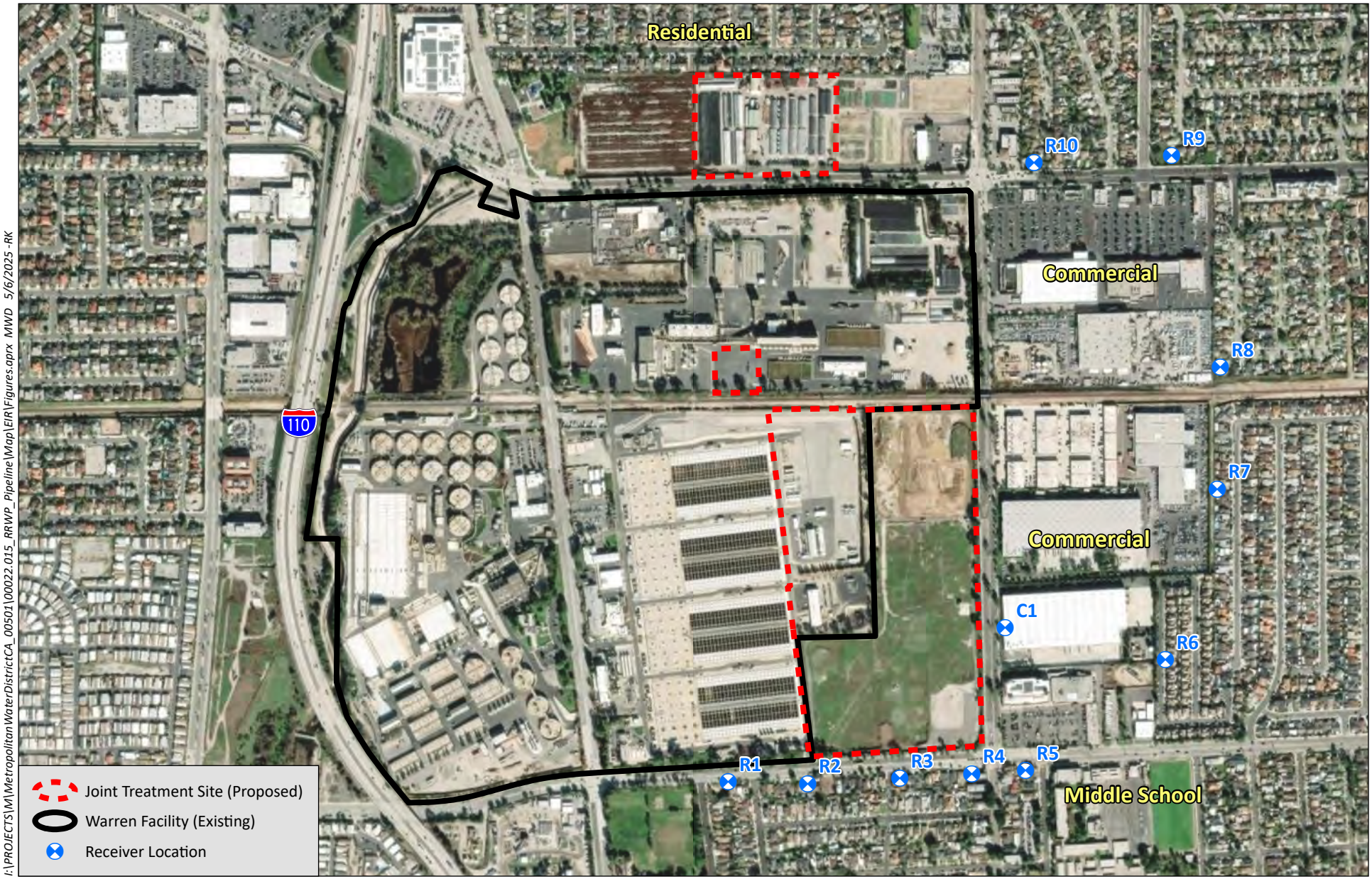
4 No ambient data are available at these locations; therefore, for the purpose of this analysis, the noise level criteria specified by the Los Angeles County Code serve as the applicable noise limits for these receivers.

Traffic

For traffic related to Pure Water, including construction traffic, a noise level increase of 5 dBA CNEL over existing conditions would be considered readily perceptible and therefore significant.

5.10.3.2 Threshold 2: Vibration

Excessive groundborne vibration related to construction and operational sources would occur if groundborne vibration exceeds the 0.1-inch per second PPV "strongly perceptible" criterion for human annoyance, or the 0.3-inch per second PPV criterion for damage to older structures, as defined in Caltrans' 2020 Transportation and Construction Guidance Manual (Caltrans 2020). Impacts would therefore be considered significant if these criteria are exceeded. These criteria are for



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Source: Base Map Layer (Esri)

PUREWATER SOUTHERN CALIFORNIA

Joint Treatment Site Operational Noise Receiver Locations

Figure 5.10-1

continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment).

5.10.3.3 Threshold 3: Aircraft Noise

Excessive noise exposure for a project located within the vicinity of a private airstrip or 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, is defined as noise levels that exceed the standards in a given jurisdiction's General Plan Noise Element for the associated land use. Impacts would therefore be considered significant if Pure Water would expose people residing or working in the Pure Water area to noise levels that exceed the standards in a given jurisdiction's General Plan Noise Element for the associated land use, if within the vicinity of a private airstrip or 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.

5.10.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

NOI-EC-1 **Construction Equipment Proper Working Order.** Construction equipment shall be kept in proper working order for the duration of the construction activities.

NOI-EC-2 **Construction Equipment Mufflers and Silencers.** The Contractor shall equip all construction equipment, fixed and mobile, including internal combustion engines, with properly operating and maintained noise mufflers and intake silencers, consistent with the manufacturers' standards.

5.10.5 Impact Analysis

5.10.5.1 Topic 1: Increase in Ambient Noise

Would Pure Water result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Program-Level Analysis

Construction

Construction of Pure Water would involve a variety of noise-generating equipment and construction activities, including site clearing, grading, excavation, trenching, pipe jacking, tunneling, utility installation, structure construction, and paving. Typical construction equipment for these activities and their associated noise levels are shown in **Table 5.10-6**. Noise levels from construction equipment would depend on a variety of factors, including the equipment's manufacturer, level of maintenance, and individual environmental factors. In addition, construction equipment is typically not used for the entirety of a given hour. **Table 5.10-6** identifies anticipated hourly percentages as a basis for

construction equipment noise modeling, which are standard percentages provided by the Federal Highway Administration's Roadway Construction Noise Model.

Table 5.10-6
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Typical Equipment	Percent Used per Hour	Reference Noise Level at 50 Feet (dBA L_{EQ})
Air Compressor	40	73.7
Backhoe	40	73.6
Breaker	10	80.0
Cement Truck	40	78.8
Compactor	10	66.6
Concrete Saw	20	82.6
Crane	16	63.4
Crawler Crane	16	67.4
Dozer	40	77.7
Drill Rig	20	72.1
Dump Truck	40	72.5
Excavator	40	79.4
Generator	100	66.4
Grader	40	81.0
Jackhammer	20	81.9
Loader	40	84.4
Roller	20	73.0
Paver	50	77.2
Ventilation Fan	100	69.4

Source: Appendix I.
dBA = A-weighted decibels; L_{EQ} = time-averaged sound level

Pure Water would be constructed within distances to NSLUs, primarily residential uses, in some locations that would result in construction noise levels at the NSLUs exceeding the noise thresholds shown above in **Table 5.10-4.** In addition, it is likely that construction noise levels would exceed ambient noise levels by 5 dBA. As such, impacts associated with construction noise are considered **potentially significant.**

Operations

Pure Water's primary sources of operational noise would include treatment facilities located at the Joint Treatment Site, DPR treatment facilities if they were to occur at Weymouth WTP or a satellite location, and pump stations along the backbone, DPR, and Azusa pipelines. The primary noise sources associated with treatment facilities would include numerous pumps, blowers, fans, and generators for the process equipment. The primary noise sources associated with the conveyance system include large pumps and generators at the pump stations. Operational activities for belowground conveyance facilities (i.e., pipelines) would be limited to dewatering, inspection, and maintenance activities for the pipelines themselves, as well as inspection, minor grading, and maintenance for the easement areas and patrol roads.

Permanent, aboveground facilities, such as treatment facilities and pump stations, would have the potential to operate within distances to NSLUs, primarily residential uses, which would result in noise

levels at the NSLUs exceeding the noise standards of the jurisdiction(s) within which the facilities are located. As such, impacts associated with operational noise at the treatment facilities and pump stations are considered **potentially significant**. Operational activities associated with belowground conveyance facilities would be short-term and intermittent and would not result in substantial increases in ambient noise levels. Therefore, impacts associated with the operation of the belowground conveyance facilities would be **less than significant**.

Project-Level Analysis

Construction

Joint Treatment Site

Construction at the Joint Treatment Site would require the use of equipment throughout the site for the duration of construction, which would generate elevated noise levels that would potentially affect nearby residents and other land uses. The primary noise-generating construction activities would include clearing, soils removal, excavation, above-grade construction, and paving. Construction equipment would include excavators, loaders, dump trucks, backhoes, rollers, graders, and cranes (see **Table 5.10-6**). Construction equipment would be located at varying locations throughout the Joint Treatment Site. Staging and storage would also occur on site. Nighttime construction within the Joint Treatment Site would generally be limited to activities that generate less noise and/or activities, such as concrete pouring, which may require cooler, nighttime temperatures.

The construction equipment would move across the site throughout a given construction day and would typically be generating noise at varying distances from NSLUs at any given hour. The closest NSLUs to the proposed AWP Facility are residences to its south, approximately 130 feet south of the AWP Facility site's southernmost edge, and over 2,000 feet from the site's northernmost edge. Residences are also located adjacent to the Workforce Training Center to the north. For the purposes of this analysis, an average construction distance of 250 feet is conservatively used to calculate noise levels from construction equipment. This distance represents the distance to nearby residences from the southern edges of the AWP Facility site and represents the average distance from residences to the center of the Workforce Training Center construction site.

The noise thresholds described in **Table 5.10-4** established for Pure Water (long-term daytime construction noise limit of 60 dBA L_{EQ} [12-hour] and long-term nighttime construction limit of 50 dBA L_{EQ} [12 hour]) would apply to nearby NSLUs, such as the residences to the south and east. Exceedance of the thresholds described in **Table 5.10-4** would be considered significant. Additionally, an increase of 5 dBA over existing ambient noise levels would also be considered significant. Grading would be the loudest phase of construction with a combination of use of a dump truck, dozer, grader, and vibratory roller, which would generate noise levels of approximately 72.3 dBA L_{EQ} (one hour) at 250 feet. This calculation does not consider attenuation by the presence of existing physical barriers such as existing walls or buildings. These existing barriers would reduce noise to varying degrees, depending on their height, material, and proximity to construction equipment and receptors. Not all construction noise would rise to the noise levels of the grading activities described above, and noise levels may be reduced by existing physical barriers such as walls or buildings. However, because it is expected that noise levels during construction would exceed thresholds provided in **Table 5.10-4** and ambient noise levels by more than 5 dBA, noise generated during construction at the Joint Treatment Site is conservatively determined to be **potentially significant**.

Backbone Pipeline

Construction of the backbone pipeline would require multiple and varied pieces of construction equipment. The types of equipment used would vary depending on the construction activity along the alignment. **Table 5.10-7** summarizes the key noise-generating construction equipment and activities for the backbone pipeline analyzed herein. The table does not include all equipment required for backbone pipeline construction.

Table 5.10-7
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment Types
Trenching	Generators, Cranes, Concrete Saws, Dump Trucks, Air Compressors, Breakers, Jackhammers, Pavers, Cement Trucks, Compactors, Ventilation Fans, Loaders, Dozers, Backhoes, Excavators
Pipe Jacking	Cranes, Loaders, Dump Trucks, Generators, Ventilation Fans, and Air Compressors
Microtunneling	Cranes, Drill Rigs, Loaders, Generators, Air Compressors, Dump Trucks, Ventilation Fans, and Excavators
Traditional Tunneling	Cranes, Loaders, Generators, Air Compressors, Dump Trucks, Ventilation Fans, and Excavators

The distance of construction equipment from NSLUs would vary along the backbone alignment; therefore, this analysis considers individual pieces of construction equipment to determine the setback distances within which construction noise would be significant. Because decibels are logarithmic units, they cannot be added or subtracted through standard arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than from one source under the same conditions. For example, if one automobile generates 70 dBA when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Table 5.10-8 provides the setback distances for NSLUs based on Pure Water's 75-dBA L_{EQ} (12-hour) construction noise threshold for short-term daytime construction (nine days or less). **Table 5.10-9** provides setback distances for NSLUs based on Pure Water's 60-dBA L_{EQ} (12-hour) standard for long-term daytime construction (10 days or more) and short-term nighttime construction. **Table 5.10-10** provides setback distances for NSLUs based on Pure Water's 50 dBA L_{EQ} (12-hour) threshold for long-term nighttime construction. If an NSLU, such as a residence, is located within these distances, impacts from backbone pipeline construction noise would be potentially significant.

Table 5.10-8
SHORT-TERM[1] DAYTIME CONSTRUCTION SETBACK DISTANCES

Equipment Type	Percent Used per Hour	Distance Within Which Noise Levels Would Exceed 75 dBA Threshold
Air Compressor	40	43 feet
Backhoe	40	43 feet
Breaker	10	89 feet
Cement Truck	40	49 feet

Equipment Type	Percent Used per Hour	Distance Within Which Noise Levels Would Exceed 75 dBA Threshold
Compactor	10	6 feet
Concrete Saw	20	120 feet
Crane	16	10 feet
Crawler Crane	16	33 feet
Dozer	40	43 feet
Drill Rig	20	36 feet
Dump Truck	40	38 feet
Excavator	40	53 feet
Generator	100	40 feet
Jackhammer	20	111 feet
Loader	40	23 feet
Paver	50	45 feet
Ventilation Fan	100	89 feet
Excavator and Dump Truck	40	65 feet
Loader and Dump Truck	40	44 feet

[1] Short-term = nine days or fewer

Table 5.10-9
LONG-TERM[1] DAYTIME AND SHORT-TERM[1] NIGHTTIME CONSTRUCTION SETBACK DISTANCES

Equipment Type	Percent Used per Hour	Distance Within Which Noise Levels Would Exceed 60 dBA Threshold
Air Compressor	40	153 feet
Backhoe	40	240 feet
Breaker	10	500 feet
Cement Truck	40	275 feet
Compactor	10	35 feet
Concrete Saw	20	675 feet
Crane	16	57 feet
Crawler Crane	16	185 feet
Dozer	40	243 feet
Drill Rig	20	201 feet
Dump Truck	40	211 feet
Excavator	40	295 feet
Generator	100	218 feet
Jackhammer	20	620 feet
Loader	40	128 feet
Paver	50	255 feet
Ventilation Fan	100	500 feet
Excavator and Dump Truck	40	363 feet
Loader and Dump Truck	40	155 feet

[1] Long-term = 10 days or greater

[2] Short-term = nine days or fewer

Table 5.10-10
LONG-TERM[1] NIGHTTIME CONSTRUCTION SETBACK DISTANCES

Equipment Type	Percent Used per Hour	Distance Within Which Noise Levels Would Exceed 50 dBA Threshold
Air Compressor	40	485 feet
Backhoe	40	760 feet
Breaker	10	1,580 feet
Cement Truck	40	870 feet
Compactor	10	105 feet
Concrete Saw	20	2,130 feet
Crane	16	587 feet
Crawler Crane	16	585 feet
Dozer	40	765 feet
Drill Rig	20	640 feet
Dump Truck	40	670 feet
Excavator	40	930 feet
Generator	100	690 feet
Jackhammer	20	1,970 feet
Loader	40	400 feet
Paver	50	810 feet
Ventilation Fan	100	1,580 feet
Excavator and Dump Truck	40	1,147 feet
Loader and Dump Truck	40	780 feet

[1] Long-term = 10 days or fewer

Short-term and long-term construction noise during both daytime and nighttime hours would exceed the thresholds for NSLUs located within the modeled distances if the necessary setback distances cannot be established (due to ROW or construction limitations, etc.). Because all the exact locations where these various pieces of construction equipment could be used (including staging and storage areas that would be located along the alignment) are not known, it is conservatively assumed that equipment would have the potential to be located within the modeled distances and would thus have the potential to result in noise levels that exceed thresholds for NSLUs. As such, impacts are considered **potentially significant.**

Installation of the backbone pipeline would lead to temporary changes in the flow of traffic in neighborhoods and other areas in the vicinity of construction sites, which could affect noise levels on local or nearby roads. To analyze how changes in traffic patterns could affect traffic-generated noise levels, estimates of average daily trips (ADT) were analyzed for the eight reaches of the backbone pipeline. These calculations were based on the kinds of construction activities anticipated for each reach and on estimates of typical roadways in each area. ADT estimates were calculated for each of the following three roadway classifications: local roadways (roadways that provide access to nearby properties); collector roadways (roadways that move traffic from local roadways to arterial roadways); and arterial roadways (major roadways that carry high traffic volumes). The CNEL for each roadway type was calculated using the Federal Highway Administration's Traffic Noise Model for existing and existing with project construction scenarios. CNEL was used because it represents the average noise level over a 24-hour period (both daytime and nighttime noise). **Table 5.10-11** provides the changes in CNEL for each reach of the backbone pipeline.

Table 5.10-11
CONSTRUCTION TRAFFIC NOISE LEVELS

Reach	Roadway Classification	Existing CNEL[1]	Existing + Project Construction CNEL	Change in CNEL	Significant Increase in Noise?[2]
1	Local	55.2	56.6	+1.5	No
	Collector	59.7	59.7	0	No
	Arterial	68.9	69.8	+0.9	No
2	Local	54.3	55.6	+1.3	No
	Collector	53.5	55.0	+1.5	No
	Arterial	68.9	69.8	+0.9	No
3	Local	53.8	54.6	+0.8	No
	Collector	55.0	55.6	+0.6	No
	Arterial	69.9	69.5	+0.4	No
4	Local	54.2	54.5	+0.3	No
	Collector	56.2	56.5	+0.3	No
	Arterial	69.8	69.9	+0.1	No
5	Local	54.5	55.7	+1.2	No
	Collector	56.7	57.4	+0.7	No
	Arterial	69.9	70.6	+0.7	No
6	Local	54.0	54.3	+0.3	No
	Collector	56.7	56.9	+0.2	No
	Arterial	69.3	69.4	+0.1	No
7	Local	53.9	55.5	+1.6	No
	Collector	55.6	56.8	+1.2	No
	Arterial	68.5	69.4	+0.9	No
8	Local	53.6	56.2	+2.6	No
	Collector	54.3	56.2	+1.9	No
	Arterial	67.9	69.5	+1.6	No

[1] CNEL measurements are calculated at 100 feet from roadway centerlines.
[2] Significant increase defined as a change of 5 CNEL.
CNEL = Community Noise Equivalent Level

As shown in **Table 5.10-11** above, the addition of construction traffic and the reassignment of existing traffic due to detours would result in a temporary increase in noise levels from 0 dBA CNEL to 2.6 dBA CNEL for all three roadway classifications. An increase of 5 dBA is considered readily perceptible to the human ear, and 5 dBA CNEL is therefore considered a significant impact with respect to daily noise levels. Because the increase in noise levels from construction traffic and the reassignment of existing traffic patterns is not anticipated to reach 5 dBA CNEL on nearby roadways, impacts would be **less than significant**.

Operations

Joint Treatment Site

The Joint Treatment Site would contain multiple noise-generating facilities throughout the site. The primary noise-generating facilities considered in this analysis include sidestream centrate treatment facility, influent pump station, odor control facility, MBR, ozone generator building, BAC facility, membrane filtration facility, RO facility, and pump station. The configuration of these facilities within the

overall Joint Treatment Site is shown in **Figure 4-2**. Facilities that would be located in open, unenclosed areas include the sidestream centrate treatment facility, influent pump station, odor control facility, membrane filtration facility, and RO facility. Facilities that would be enclosed within concrete buildings include the MBR mechanical room, ozone generator building, BAC facility, and pump station. Calculated noise levels assume operation of the following equipment:

- Blowers and pumps at the sidestream centrate treatment facility (unenclosed)
- Pumps at the influent pump station (unenclosed)
- Fans at the odor control facility (unenclosed)
- Blowers, pumps, and a compressed air system in the MBR mechanical room (enclosed)
- Generators at the ozone generator building (enclosed)
- Blowers and pumps at the BAC facility (enclosed)
- Pumps and compressed air systems at the membrane filtration facility (unenclosed)
- Pumps and energy recovery devices at the RO facility (unenclosed)
- Pumps at the pump station (enclosed)

Calculated noise levels assumed that physical barriers would be present such as building enclosures (as described above) and an existing wall surrounding the site.

Figure 5.10-1 depicts 10 residential receivers and one commercial receiver surrounding the Joint Treatment Site that were selected as a representative sample of noise in the vicinity. **Table 5.10-12** displays the projected daytime and nighttime noise levels at these locations. The projected daytime and nighttime noise levels consider operations at the Joint Treatment Site (not including the Workforce Training Center) in combination with existing daytime and nighttime ambient noise levels, respectively, with the exception of R6, R7, and R8, which use the noise level criteria specified by the County of Los Angeles.

Table 5.10-12
JOINT TREATMENT SITE OPERATIONAL NOISE LEVELS AT NEARBY RECEPTORS

Receiver Location	Daytime Noise Threshold[1] (dBA)	Nighttime Noise Threshold[1] (dBA)	Projected Joint Treatment Site Facility Noise Level[2] (dBA)	Projected Cumulative Daytime Noise Level[3] (dBA)	Projected Cumulative Nighttime Noise Level[3] (dBA)	Exceeds Threshold?
R1	72	65	41	72	65	No
R2	72	65	49	72	65	No
R3	72	65	42	72	65	No
R4	72	65	44	72	65	No
R5	72	65	41	72	65	No
R6[4]	50	45	36	50	**46**	**Yes**
R7[4]	50	45	32	50	45	No
R8[4]	50	45	37	50	**46**	**Yes**

Receiver Location	Daytime Noise Threshold[1] (dBA)	Nighttime Noise Threshold[1] (dBA)	Projected Joint Treatment Site Facility Noise Level[2] (dBA)	Projected Cumulative Daytime Noise Level[3] (dBA)	Projected Cumulative Nighttime Noise Level[3] (dBA)	Exceeds Threshold?
R9	65	59	29	65	59	No
R10	65	59	33	65	59	No
C1	72	65	53	72	65	No

Source: Veneklasen 2024

[1] Refer to Table 5.10-5.

[2] Modeled noise levels from Joint Treatment Site only (not including the Workforce Training Center).

[3] Projected noise level based on operation of the Joint Treatment Site (not including the Workforce Training Center) and existing ambient noise combined.

[4] No ambient data are available at these locations; therefore, for the purpose of this analysis, the noise level criteria specified by the Los Angeles County Code serve as the applicable noise limits for these receivers.

dBA = A-weighted decibels; L_{EQ} = one-hour equivalent sound level

Noise levels at the 11 receiver locations were analyzed against the daytime and nighttime noise thresholds identified in **Table 5.10-5**, which have been included in **Table 5.10-12** for reference. As shown in **Table 5.10-12**, in combination with the existing ambient noise levels, noise generated by operations at the Joint Treatment Site would cause nighttime noise levels to exceed applicable thresholds at two receiver locations (R6 and R8) where no ambient data are available and the noise level criteria specified by the Los Angeles County Code serve as the applicable noise limits for these receivers for the purpose of this analysis. Impacts would therefore be considered **potentially significant**.

The specific site plan of the Workforce Training Center is not yet complete and therefore calculation of the potential noise level generated at specific NSLUs from Workforce Training Center-related operational noise, such as heating, ventilation, and air conditioning units or other equipment, is not known. Residential NSLUs are located adjacent to the Workforce Training Center site to the north. Because it cannot be determined whether noise levels from the Workforce Training Center to surrounding NSLUs could be reduced to the applicable City of Carson's noise limits, impacts are considered **potentially significant**.

Backbone Pipeline

Operational activities for the backbone pipeline would consist of dewatering, inspection, and maintenance activities for the pipeline itself, as well as minor grading of patrol roads and around access structures within the easement areas, primarily along the San Gabriel River. Regular patrolling would also occur along patrol roads for visual inspection of above-ground ancillary facilities and security purposes. These activities would be periodic and short in duration, and would not result in substantial increases in ambient noise levels. Impacts associated with operation of the backbone pipeline would therefore be **less than significant**.

5.10.5.2 Topic 2: Vibration

Would Pure Water result in generation of excessive groundborne vibration or groundborne noise levels?

Program-Level Analysis

Construction

Pure Water construction activities have the potential to generate low levels of groundborne vibration because of the operation of heavy equipment, such as a vibratory roller, pile driver, tunnel boring machine, and microtunnel boring machine. This equipment generates vibrations that propagate though the ground and diminish in intensity with distance from the source. As discussed in Section 5.10.3.2, excessive groundborne vibration would occur if it exceeds the 0.1-inch per second PPV "strongly perceptible" criterion for human annoyance, or the 0.3-inch per second PPV for damage to older structures, as defined in Caltrans' 2020 Transportation and Construction Guidance Manual (Caltrans 2020).

Vibratory rollers are typically used to compact soil following trenching and excavation activities and to compact asphalt. Caltrans provides a reference PPV for a vibratory roller of 0.21 inch per second at 25 feet. Based on this reference PPV, a vibratory roller would generate vibration levels above the "strongly perceptible" human annoyance criterion of 0.1 inch per second PPV within a distance of approximately 45 feet, and above the structural damage criterion for older structures of 0.3 inch per second PPV within a distance of approximately 18 feet.[1]

Pile driving may be required for the installation of foundations at Pure Water's larger above-ground facilities (e.g., the AWP Facility). Caltrans provides a reference PPV for a pile driver of 0.65 inch per second at 25 feet. Based on this reference PPV, a pile driver would generate vibration levels above the "strongly perceptible" human annoyance criterion of 0.1 inch per second PPV within a distance of approximately 130 feet, and above the structural damage criterion for older structures of 0.3 inch per second PPV within a distance of approximately 50 feet.[2]

A tunnel boring machine or microtunnel boring machine could operate underground in the vicinity of vibration-sensitive land uses along portions of the conveyance alignments. Vibration from a tunnel boring machine or microtunnel boring machine may vary widely, depending on the depth of the machines, distance to receivers, and intervening material (i.e., soil and/or rock type).

Potential off-site exposure to such groundborne vibration would be temporary; however, because the precise distances between vibratory rollers, pile drivers, tunnel boring machines, and/or microtunnel boring machines and nearby human receptors and older structures are not fully known, vibration levels may exceed both human annoyance and structural damage thresholds. Impacts are therefore considered **potentially significant.**

[1] Equipment PPV = Reference PPV * $(25/D)^n$ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2020.
[2] Equipment PPV = Reference PPV * $(25/D)^n$ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2020.

Operations

Pure Water's operational activities would include inspections, maintenance of equipment, dewatering, minor grading, and patrolling. These operational activities would not require use of equipment that generates substantial amounts of groundborne vibrations. Impacts associated with operation of Pure Water would therefore be **less than significant**.

Project-Level Analysis

Construction

Joint Treatment Site

Construction at the Joint Treatment Site is expected to require vibratory rollers and pile drivers. The nearest vibration-sensitive human receptors and older structures to the Joint Treatment Site are the residences located south of the AWP Facility site across Lomita Boulevard and residences adjacent to the northern side of the Workforce Training Center site. Vibratory rollers and pile drivers used at the AWP Facility site would operate at distances to the residences greater than those within which excessive vibration would occur (45 feet for human annoyance and 18 feet for damage to structures for a vibratory roller; 130 feet for human annoyance and 50 feet for damage to structures for a pile driver). As such, no vibration impacts from construction of the AWP Facility are anticipated. It is not expected that pile driving would be required for construction of the Workforce Training Center. Vibratory rollers would likely be required for construction of the Workforce Training Center and could operate within 45 feet of residences; therefore, use of a vibratory roller at the Workforce Training Center site could result in temporary vibration levels at residences in excess of the human annoyance threshold. As such, impacts are considered **potentially significant**. A vibratory roller is not expected to be used within 18 feet of off-site structures, and therefore would not result in vibration levels at off-site structures in excess of the structure damage threshold.

Backbone Pipeline

Construction of the backbone pipeline would require use of vibratory rollers, tunnel boring machines, and microtunnel boring machines. There is potential for vibratory rollers to be used at distances to residences within which excessive vibration would occur (45 feet for human annoyance and 18 feet for damage to structures). Similarly, use of a tunnel boring machine or microtunnel boring machine could result in vibration levels in excess of thresholds for human annoyance or structure damage. Associated temporary groundborne vibration impacts are therefore considered **potentially significant.**

Operations

Joint Treatment Site

Pure Water operational activities for the Joint Treatment Site would include inspections and maintenance of equipment, and would not require use of equipment that generates substantial amounts of groundborne vibrations. Impacts associated with operation of the Joint Treatment Site would therefore be **less than significant**.

Backbone Pipeline

Pure Water operational activities for the backbone pipeline and associated structures and facilities would consist of dewatering, inspection, and maintenance activities, as well as minor grading of patrol roads and around manhole access structures within the easement areas. Regular patrolling would also occur along patrol roads for visual inspection of above-ground ancillary facilities and security purposes. These activities would be periodic and short in duration, and would not result in substantial increases in groundborne vibration levels. Impacts associated with operation of the backbone pipeline would therefore be **less than significant**.

5.10.5.3 Topic 3: Aircraft Noise

If located within the vicinity of a private airstrip or 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 Pure Water expose people residing or working in the project area to excessive noise levels?

Program-Level Analysis

Airports in the Pure Water area that are within two miles of proposed Pure Water facilities and components include Long Beach Airport and the San Gabriel Valley Airport (formerly El Monte Airport). Both airports are subject to the Los Angeles County Airport Land Use Plan (Los Angeles County Airport Land Use Commission 1991), which identifies areas of influence. The Airport Influence Area is the defined space surrounding an airport that can be affected by airport operations, and includes areas subject to noise impacts and safety hazards. The Los Angeles County Airport Land Use Plan sets forth land use measures that limit the public's exposure to excessive noise and airport related hazards and that minimize nearby uses that may interfere with airport operations.

Pure Water's facilities and components would be located outside both airports' Airport Influence Areas (Los Angeles County Airport Land Use Commission 1991). Because Pure Water's facilities and components would be located outside areas of excessive noise, Pure Water would not expose temporary construction workers and permanent operational workers to excessive airport noise. Impacts would, therefore, be **less than significant**.

Project-Level Analysis

The project-level components are part of the overall Pure Water program; therefore, information and analysis presented above under *Program-Level Analysis* are also applicable to the components evaluated at the project level.

5.10.6 Level of Significance Before Mitigation

Impacts related to construction and operational noise generation would be **potentially significant**. Impacts related to construction vibration would also be **potentially significant**, while operational vibration would be **less than significant**. Impacts related to aircraft noise would be **less than significant** for both construction and operations.

5.10.7 Mitigation Measures

5.10.7.1 Increase in Ambient Noise Levels

Construction

To reduce noise levels during construction, the following mitigation measure shall be implemented.

NOI-MM-1 **Noise Control Plan.** A Noise Control Plan(s) shall be prepared to reduce noise at noise-sensitive land uses (NSLUs) from Pure Water's construction. The plan(s) shall be prepared by the contractor and approved by Metropolitan in coordination with applicable local jurisdictions prior to initiation of construction activities. The plan(s) shall include noise control measures to achieve the following standards established for Pure Water, to the extent feasible, and allow for completion of Pure Water in light of necessary work methods and the physical constraints of available work areas:

- Noise levels shall be assessed at NSLU structures closest to construction activity.
- Short-term construction is defined as construction lasting a total of nine days or fewer at a given location. Long-term construction is defined as work lasting a total of 10 days or more at a given location.
- Short-term daytime construction noise shall not exceed 75 time-averaged A-weighed decibels (dBA L_{EQ}; 12-hour).
- Long-term daytime construction noise shall not exceed 60 dBA L_{EQ} (12-hour).
- Short-term nighttime construction noise shall not exceed 60 dBA L_{EQ} (12-hour).
- Long-term nighttime construction noise shall not exceed 50 dBA L_{EQ} (12-hour).
- Ambient noise measurements shall be taken prior to construction.
- Construction shall not exceed ambient noise levels of a given construction area by 5 dBA L_{EQ} (12-hour).

Noise control measures in the Noise Control Plan could include, but are not limited to, the following:

- Providing barriers at least two feet higher than equipment's exhaust pipes and engines to block the line-of-sight between construction activities and nearby NSLUs. Barriers shall be solid and constructed of materials such as masonry, wood, plastic, fiberglass, steel, acoustic blankets or a combination of those materials, with no pronounced cracks or gaps through or below the barrier.
- Increasing setback distances between equipment and NSLUs.
- Physically shielding stationary noise-generating equipment, such as generators and compressors, from direct line-of-sight to NSLUs.

- Using electrical power to run air compressors and similar power tools, in lieu of gas or diesel-powered compressors.
- Reducing construction hours within a given 12-hour period.
- Scheduling deliveries during daytime hours.
- Using noise-producing signals, including horns, whistles, alarms, public address systems, and bells for safety warning purposes only.
- Locating designated worker gathering areas and parking areas away from NSLUs.

When measured noise levels at the NSLU structures are shown to exceed the above-specified noise levels, additional noise control measures or improvements to noise control measures already in place may be implemented in an effort to achieve the applicable noise standards, to the extent feasible. Noise monitoring shall be performed again to record the achieved level of noise reduction.

Operation

To reduce noise levels associated with operation of facilities at the Joint Treatment Site to below applicable significance thresholds as identified in the City of Carson Municipal Code, mitigation measure **NOI-MM-2** would be implemented.

NOI-MM-2 **Joint Treatment Site Operational Noise Reduction**. Final design for the Joint Treatment Site facilities shall incorporate noise attenuation such that exterior noise levels from operation of the Joint Treatment Site, in combination with existing daytime and nighttime ambient noise levels, do not exceed existing ambient noise levels at the nearest commercial and residential receptors. Daytime is defined as the period between 7:00 a.m. and 10:00 p.m. Nighttime is defined as the period between 10:00 p.m. and 7:00 a.m.

A qualified acoustical specialist shall review facility design plans prior to construction to ensure noise reduction measures would achieve compliance with applicable noise standards. If necessary, additional noise attenuation measures, such as higher Sound Transmission Class [STC] enclosures, repositioning of equipment, or an enhanced noise barrier (e.g., concrete enclosures), may be recommended by the acoustical specialist to ensure adequate noise attenuation. Once operation of facilities is initiated, noise measurements shall be taken by a qualified acoustical specialist to verify that noise levels generated from facilities comply with applicable noise standards. If noise levels exceed applicable noise standards, additional noise attenuation measures shall be implemented as necessary to achieve the applicable thresholds.

To reduce noise levels associated with operation of permanent, aboveground facilities (such as pump stations, etc. other than the Joint Treatment Site) to established thresholds of applicable jurisdiction(s), mitigation measure **NOI-MM-3** would be implemented.

NOI-MM-3 **Operational Facility Noise Reduction**. Final design for permanent, aboveground facilities that include operational equipment (excluding the Joint Treatment Site) shall incorporate noise attenuation such that exterior noise levels from each facility to nearby receptors would not exceed the noise limits of the applicable jurisdiction(s).

A qualified acoustical specialist shall review facility design plans prior to construction to ensure noise reduction measures would achieve compliance with applicable noise standards. If necessary, additional noise attenuation measures such as higher STC enclosures, repositioning of equipment, or an enhanced noise barrier (e.g., fences, walls, or full enclosure of the facility/equipment), may be recommended by the acoustical specialist to ensure adequate noise attenuation. Once operation of facilities is initiated, noise measurements shall be taken by a qualified acoustical specialist to verify that noise levels generated from facilities comply with applicable noise standards. If noise levels exceed applicable noise standards, additional noise attenuation measures shall be implemented as necessary to achieve the applicable thresholds.

5.10.7.2 Vibration

To reduce impacts associated with construction vibration, mitigation measures **NOI-MM-4**, **NOI-MM-5**, and **NOI-MM-6** shall be implemented.

NOI-MM-4 **Vibratory Roller Vibration Limits**. Vibratory rollers shall not be located within 45 feet of a vibration-sensitive receptor to ensure vibration levels of 0.1 inch per second peak particle velocity (PPV) for human annoyance are not exceeded. Vibratory rollers shall also be located a minimum of 18 feet from a structure that is susceptible to vibration damage to ensure vibration levels of 0.3 PPV are not exceeded.

Alternative equipment, such as the use of a plate compactor, handheld compactor, or tamping rammer, would be required within 45 feet of a vibration-sensitive receptor and/or 18 feet from a structure that is susceptible to damage from vibration to reduce vibration impacts.

NOI-MM-5 **Tunnel Boring Machine Vibration Limits**. To ensure tunnel boring machines and microtunnel boring machines do not exceed vibration levels of 0.1 inch per second PPV for human annoyance and 0.3 inch per second PPV for a structure that is susceptible to vibration damage, vibration monitoring during construction and/or a site-specific vibration analysis prior to construction shall be required. The site-specific analysis shall identify the vibration potential of the boring activities, soil composition, and distance to receptors and recommend attenuation measures or alternative techniques, such as reducing cutter head torque, thrust, and boring speed, if necessary.

NOI-MM-6 **Pile Driving Construction Vibration Limits**. To ensure pile driving does not exceed vibration levels of 0.1 inch per second PPV for human annoyance and 0.3 inch per second PPV for a structure that is susceptible to vibration damage, vibration monitoring during construction and/or a site-specific vibration analysis prior to construction shall be required within 130 feet of a vibration-sensitive receptor and/or within 50 feet of older structures. The site-specific analysis shall identify the vibration potential of the pile driving activities, soil composition, and distance to receptors and recommend

attenuation measures or alternative techniques, such as jetting, predrilling, pile cushioning, and use of nonimpact drivers, if necessary.

5.10.8 Level of Significance After Mitigation

5.10.8.1 Increase in Ambient Noise Levels

Construction

Joint Treatment Site

Mitigation measure **NOI-MM-1** would reduce noise levels for NSLUs near the Joint Treatment Site to the applicable thresholds. The specific design and location(s) of barriers would be determined as part of the Noise Control Plan(s) required by **NOI-MM-1**. The distance to nearby NSLUs and the ability to construct noise barriers would result in sufficient noise attenuation to comply with noise thresholds. Therefore, impacts from Joint Treatment Site construction would be **less than significant** with implementation of mitigation measure **NOI-MM-1**.

Backbone Pipeline

Based on the variability of locations at which construction activities could occur and associated site conditions, it cannot be guaranteed that implementation of mitigation measure **NOI-MM-1** would feasibly reduce noise levels for NSLUs near Pure Water components (other than the Joint Treatment Site) to below the significance thresholds; therefore, impacts are considered **potentially significant and unavoidable**.

Operations

Joint Treatment Site

Implementation of mitigation measure **NOI-MM-2** requires the Joint Treatment Site facilities to demonstrate that attenuation features have been added such that noise levels would be reduced to below the applicable noise threshold. **Table 5.10-13** shows the results of the Joint Treatment Site (not including the Workforce Training Center) modeling where additional attenuation is incorporated. Specifically, the membrane filtration facility and RO equipment (except for the RO feed pumps) were considered for the purposes of noise attenuation modeling to be located within concrete buildings due to potential for noise. As shown in **Table 5.10-13**, noise levels with these specific features incorporated would be reduced to below applicable thresholds. As such, sufficient noise attenuation is feasible, and impacts from operations at the Joint Treatment Site would be **less than significant** with implementation of **NOI-MM-2**.

Table 5.10-13
JOINT TREATMENT SITE OPERATIONAL NOISE LEVELS AT NEARBY RECEPTORS - MITIGATED

Receiver Location	Daytime Noise Threshold (dBA L_{EQ})	Nighttime Noise Threshold (dBA L_{EQ})	Projected Joint Treatment Site Noise Level[1] (dBA L_{EQ})	Projected Cumulative Daytime Noise Level[2] (dBA L_{EQ})	Projected Cumulative Nighttime Noise Level[2] (dBA L_{EQ})	Exceeds Threshold?
R1	72	65	40	72	65	No
R2	72	65	41	72	65	No
R3	72	65	43	72	65	No
R4	72	65	45	72	65	No
R5	72	65	40	72	65	No
R6[3]	50	45	35	50	45	No
R7[3]	50	45	30	50	45	No
R8[3]	50	45	32	50	45	No
R9	65	59	28	65	59	No
R10	65	59	31	65	59	No
C1	72	65	51	72	65	No

Source: Veneklasen 2024

[1] Modeled noise levels from Joint Treatment Site only (not including the Workforce Training Center).

[2] Projected noise level based on operation of the Joint Treatment Site (not including the Workforce Training Center) and existing ambient noise.

[3] No ambient data are available at these locations; therefore, for the purpose of this analysis, the noise level criteria specified by the Los Angeles County Code serve as the applicable noise limits for these receivers.

dBA = A-weighted decibels; L_{EQ} = one-hour equivalent sound level

Similarly, standard noise attenuation features, such as parapets, would provide sufficient noise attenuation for the Workforce Training Center, and impacts from Workforce Training Center operations would be less than significant with implementation of mitigation measure **NOI-MM-2**. As such, sufficient noise attenuation is feasible, and impacts from Joint Treatment Site operations would be **less than significant** with implementation of **NOI-MM-2**.

Backbone Pipeline

Implementation of mitigation measure **NOI-MM-3** requires permanent, aboveground facilities (other than the Joint Treatment Site) to demonstrate that attenuation features have been included in design such that noise levels would be reduced to below applicable noise thresholds; therefore, impacts from permanent, aboveground facility operations would be **less than significant**.

5.10.8.2 Vibration

With implementation of mitigation measures **NOI-MM-4**, **NOI-MM-5**, and **NOI-MM-6** requiring vibration monitoring or a vibration analysis and potential implementation of alternative techniques, impacts from vibration would be **less than significant**.

5.10.8.3 Conclusion

Impacts related to construction noise at the Joint Treatment Site would be **less than significant after mitigation**. Impacts related to construction of the backbone pipeline and other facilities would be **potentially significant and unavoidable after mitigation**. Operational noise impacts for Pure Water would be **less than significant with mitigation**.

Impacts related to construction vibration would be **less than significant with mitigation**. Impacts related to operational vibration would be **less than significant without mitigation**.

Impacts related to aircraft noise are **less than significant without mitigation**.

5.10.9 References

California Department of Transportation. 2020. Transportation and Construction Vibration Guidance Manual. April.

California Department of Transportation. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.

Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September

HELIX Environmental Planning, Inc. 2025. Pure Water Southern California Noise Technical Report. October.

Los Angeles County Airport Land Use Commission. 1991. Los Angeles County Airport Land Use Plan. Adopted December 19, 1991. Revised December 1, 2004. Available at: https://planning.lacounty.gov/long-range-planning/los-angeles-county-airport-land-use-plan/.

Veneklasen. 2024. Noise Study for the AWPF Layout at the Joint Plant Site for PWSC. July 12.

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5.11 TRANSPORTATION

This section addresses the potential transportation impacts of Pure Water. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level. The potential impacts associated with certain facilities and components are further analyzed at a project level where sufficient information is available.

The chart below identifies those Pure Water facilities and components for which a project-level analysis is being provided as part of this section.

TRANSPORTATION LEVEL OF ANALYSIS	
Components	**Project Level?**
Joint Treatment Site	
• AWP Facility	Yes
• Warren Facility Improvements	Yes
• Workforce Training Center	Yes
Backbone Conveyance System	
• Backbone Pipeline	Yes
• Backbone Pump Stations[1]	Yes
• Service Connections	No
DPR Facilities (for Weymouth or Satellite Location)	No
Recharge Facilities	No
Non-potable Water Facilities	No
Sanitation Districts Support Facilities	No

[1] While the specific locations for the pump stations are currently not known, they are analyzed at the project level for this transportation analysis since impacts are generally not location-specific.

The program-level analysis is based on readily available, general information derived from applicable resource and planning documents. The project-level analysis further considers and is based on the information, data, assumptions, and methodologies presented in the Traffic Analysis Report prepared for the Joint Treatment Site and backbone conveyance system (Iteris, Inc. 2025; Appendix J).

5.11.1 Existing Conditions

5.11.1.1 Roadway System

Regional Highways

Interstate highways and state routes located within the Pure Water area include I-110, I-405, I-710, SR 19, SR 91, I-605, I-105, SR 42, I-5, SR 72, SR 60, I-10, and I-210.

Local Roadways

Local roadways generally owned, operated, and maintained by local cities or the County of Los Angeles are located throughout the Pure Water area. The backbone alignment routes along portions of 13 roadways, including the following:

- **Main Street:** classified as a Major Highway in the City of Carson; includes two lanes in each direction.
- **Sepulveda Boulevard:** classified as a Major Highway in the City of Carson; includes two lanes in each direction.
- **Alameda Street:** classified as a Major Highway in the City of Carson; includes two to three lanes in each direction.
- **Del Amo Boulevard:** classified as a Major Highway in the City of Carson and a Major Avenue in the City of Long Beach; includes two to three lanes in each direction.
- **Paramount Boulevard:** classified as a Major Avenue in the City of Long Beach and a Major Highway in the City of Lakewood; includes two lanes in each direction.
- **South Street:** classified as a Major Avenue in the City of Long Beach and a Major Highway in the City of Lakewood; includes two lanes in each direction.
- **Palo Verde Avenue:** classified as a Secondary Highway in the City of Lakewood and a Secondary Arterial in the City of Cerritos; includes one to lanes in each direction.
- **Pioneer Boulevard:** classified as a Local Street in the County of Los Angeles; includes one lane in each direction.
- **San Gabriel River Parkway:** classified as a Secondary Arterial in the City of Pico Rivera and a Secondary Highway in the City of Industry; includes two lanes in each direction.
- **Rivergrade Road:** classified as a Collector Road/Local Street in the City of Irwindale; includes two lanes in each direction.
- **Live Oak Lane:** classified as a Collector Road/Local Street in the City of Irwindale; includes one lane in each direction.
- **Duarte Road:** classified as an Arterial in the City of Duarte; includes two lanes in each direction.
- **Huntington Drive/Foothill Boulevard:** classified as a Major highway in the City of Irwindale; includes two lanes in each direction.

5.11.1.2 Public Transportation

The Los Angeles County Metropolitan Transportation Authority (Metro) and Metrolink provide regional public transportation service in the Pure Water area. Metro provides both bus service and light rail service. It has 120 bus routes and 11,980 bus stops servicing 1,447 square miles as well as six rail lines

and 108 rail stations servicing 109 linear miles. The backbone alignment crosses the A (Blue) Line, which is a 48.5-mile-long light rail line that extends from the City of Long Beach in the south to the City of Azusa in the north. The backbone alignment crosses the A (Blue) Line at Del Amo Boulevard in the City of Carson and at I-210 in the City of Irwindale. The backbone alignment also crosses the C (Green) Line, which is a 19.3-mile-long light rail line that extends from the City of Redondo Beach in the west to the City of Norwalk in the east, near the I-605/I-105 interchange in the City of Downey.

Metrolink provides a commuter rail service that is the third largest in the nation, with 546 total routes connecting six southern California counties. The backbone alignment crosses four rail lines utilized by Metrolink that are owned by either Metrolink, Union Pacific, or BNSF. These four lines include: (1) the Orange County Line, which extends from downtown City of Los Angeles in the north to the City of Oceanside in the south, near I-605 and Slauson Ave in the City of Santa Fe Springs; (2) the 91-Perris Valley Line, which extends from downtown City of Los Angeles in the west to the City of Perris in the east, near I-605 and Slauson Ave in the City of Santa Fe Springs; (3) the Riverside Line, which extends from downtown City of Los Angeles in the west to the City of Riverside in the east, near I-605 and Beverly Boulevard in the City of Pico Rivera; and (4) the San Bernardino Line, which extends from downtown City of Los Angeles in the west to the City of Redlands in the east, near I-605 and Valley Boulevard in the City of Baldwin Park.

In addition to these regional public transportation services, local jurisdictions in the Pure Water area operate local bus systems.

5.11.1.3 Bicycle and Pedestrian Facilities

Of the roadways mentioned in Section 5.11.1.1 within which the backbone alignment routes, Del Amo Boulevard, Paramount Boulevard, South Street, and Duarte Road include bicycle lanes. Sidewalks are present along all or portions of each of the 13 roadways. In addition to these localized bicycle and pedestrian facilities, regional public trails are present in the Pure Water area. Specifically, the backbone alignment runs parallel to a large portion of the San Gabriel River Trail, which is a 35.4-mile multi-use trail that runs from the City of Seal Beach in the south to the City of Azusa in the north. The backbone alignment also crosses the Los Angeles River Trail at Del Amo Boulevard. The Los Angeles River Trail is part of the Los Angeles River multi-use trail corridor, which consists of the 9.6-mile Los Angeles River Trail, the 15.6-mile Rio Hondo Trail, and the 4.5-mile Santa Anita Wash Trail, which collectively extend from the City of Long Beach in the south to the City of Arcadia in the north. The regional trail system is operated and maintained by Trails LA County, which is a partnership led by the Los Angeles County Department of Parks and Recreation in collaboration with the National Park Service, California State Parks, the Santa Monica Mountains Conservancy, the Mountains Recreation and Conservation Authority, the Mountains Restoration Trust, and the Catalina Island Conservancy.

5.11.2 Regulatory Framework

5.11.2.1 Federal

Transportation policies are made at the state and local level. No federal regulations apply.

5.11.2.2 State

California Department of Transportation

Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway System as well as the portion of the Interstate Highway System within the state's boundaries. Caltrans is divided into seven districts across the state. The Pure Water area is within District 7, which encompasses Los Angeles and Ventura counties. Caltrans' construction practices require temporary traffic control planning in accordance with the California Manual on Uniform Traffic Control Devices (MUTCD) during any time the normal function of a roadway is suspended (Caltrans 2024). In addition, Caltrans requires that permits be obtained for transportation of oversized loads and certain materials as well as for construction-related traffic disturbance.

Senate Bill 743

SB 743 was signed into law on September 27, 2013, and declares that "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment." It further directed the Office of Planning and Research (OPR; now known as the Office of Land Use and Climate Innovation) to develop revisions to the CEQA Guidelines to establish new criteria for determining the significance of transportation impacts. SB 743 changed the approach to transportation impact analysis under CEQA by establishing measures such as VMT, VMT per capita, or automobile trip generation rates as the primary measures of transportation impacts and eliminates the traditionally used measures of automobile delay, level of service, and other measures of traffic congestion as the basis for determining significant impacts under CEQA.

For the purposes of CEQA (CEQA Guidelines Section 15064.3(a)), VMT refers to the amount and distance of "automobile" travel attributable to a project and "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy vehicles such as semi-trucks and large delivery trucks are excluded from transportation VMT assessment per the CEQA Guidelines due to interstate commerce considerations including the long-distance nature of truck traffic traveling from the Ports of Long Beach, Los Angeles, and Oakland to other states.

5.11.2.3 Regional

Southern California Association of Governments

The SCAG region encompasses six Southern California counties including Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG is the largest Metropolitan Planning Organization in the United States. SCAG is responsible for developing long-range regional transportation plans including sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the SCAQMD's AQMP.

5.11.2.4 Local

Programs, plans, and policies addressing the local circulation system are contained in the Mobility, Circulation, Transportation, or Infrastructure elements of general plans of the various jurisdictions within which Pure Water facilities would be located. These elements address roadway, bicycle, pedestrian, transit, and freight facilities. The elements establish existing conditions related to these

facilities, identify deficiencies, and propose improvements to enhance a jurisdiction's mobility network. Specific programs, plans, and policies are set forth to promote implementation of the improvements. Programs, plans, and policies identified in the general plans typically are city- or county-wide, with mobility network improvements directed and untaken by the jurisdictions themselves. As such, programs, plans, and policies included in general plans are generally not directly applicable to Pure Water.

5.11.3 Significance Thresholds

The following criteria from Appendix G of the CEQA Guidelines are used to determine the significance of impacts of Pure Water as related to transportation. Pure Water would have a significant impact if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);

3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

4. Result in inadequate emergency access.

5.11.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

TRA-EC-1 **Traffic Control Plan/Traffic Management Plan.** Metropolitan or the contractor(s) shall prepare and implement a Traffic Control Plan and/or a Traffic Management Plan for each component of Pure Water constructed within public right-of-way to manage traffic flow during construction, reduce potential interference with local emergency response plans, reduce potential traffic safety hazards, and ensure adequate access for emergency responders as required by the local jurisdiction. Development and implementation of these plans shall be coordinated with local agencies with jurisdiction over affected roadways.

Traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours as feasible, installing warning and detour signs (as needed), drafting lane closure procedures, and placing traffic cones to guide drivers indicating potential road hazards or detours (as needed) shall be implemented. Other potential traffic control measures include the provision of safe detour routes for pedestrians if sidewalks are to be closed and temporary changes to traffic signal phases and timings, if needed.

Metropolitan shall provide oversight of the construction contractor(s) to ensure that these plans are implemented during construction. Traffic control measures shall be

consistent with the California Manual of Uniform Traffic Control Devices and the Work Area Traffic Control Handbook.

In addition, Metropolitan shall coordinate with local police and fire departments to ensure their awareness of construction activities and provide detour routes for emergency vehicles and develop a process for responding to and tracking issues pertaining to construction activity.

5.11.5 Impact Analysis

5.11.5.1 Topic 1: Conflict with Program, Plan, Ordinance, or Policy

Would Pure Water conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Program-Level Analysis

The primary plans that address the circulation system in the Pure Water area are the various jurisdictions' general plans. Each of these plans addresses various modes of transportation, including vehicles, bicycles, pedestrians, and transit, and includes objectives and policies related to these modes of transportation. As discussed above in Section 5.11.2.4, these policies typically are city- or county-wide, with mobility network improvements directed and untaken by the jurisdictions themselves. As such, programs, plans, and policies included in general plans are generally not directly applicable to Pure Water.

Construction

Construction of the Pure Water facilities would temporarily contribute to traffic on regional and local roadways due to construction worker vehicle trips, delivery truck trips, and haul truck trips for demolition debris and soil movement. Construction would also require activities such as trenching and pipeline installation within roadways and mobilization of off-road equipment and materials within roadways. These activities would add construction vehicle traffic to roadways around the various components and result in lane closures, which could add to existing roadway congestion in urban areas, cause intersection delays, and detour pedestrian and bicycle paths. However, TCPs and/or TMPs would be implemented in accordance with **TRA-EC-1**, which would manage traffic flow during construction in a manner that would allow for continued and safe access for vehicles, bicyclists, and pedestrians. Pure Water haul routes would be designed considering pedestrian, bicycle, and transit facilities, and would utilize designated haul routes to the extent feasible. Upon completion of construction, disturbed roadways, and other circulation facilities, such as sidewalks and bicycle lanes, would be restored to pre-existing conditions. Therefore, Pure Water construction would not conflict with or obstruct implementation of a program, plan, ordinance, or policy addressing the circulation system, such as those contained in the local jurisdictions' general plans. Impacts would be **less than significant**.

Pure Water's pipeline alignments are anticipated to cross Metro and Metrolink rail facilities. Potential impacts to such facilities during construction could include damage to the structural integrity of tracks and related infrastructure, disruption of rail service, effects on rail crossing safety for pedestrians and vehicles, and changes to customer access to and circulation at stations. Pure Water would, however, utilize trenchless construction techniques to install pipelines where the alignments cross rail facilities such that continued and safe operation of the facilities would occur. In addition, Metropolitan is

conducting ongoing coordination with Metro to address potential conflicts with Metro's infrastructure, safety, and operations. As such, impacts related to Metro's transit facilities would be **less than significant**.

Operations

Operation of the Pure Water facilities would include vehicle trips generated by staff, inspections and maintenance, chemical/material deliveries, and visitors. Facilities at the Joint Treatment Site, specifically the AWP Facility and Workforce Training Center, would be the main traffic-generating permanent facilities of Pure Water. Impacts associated with the Joint Treatment Site are addressed in greater detail below under *Project-Level Analysis.* As disclosed therein, trips generated by staff, deliveries, trainees, and visitors associated with the Joint Treatment Site would be minimal compared with average daily traffic volumes along roadways near the Joint Treatment Site. Trip generation associated with the other Pure Water facilities and components would be limited to inspection and maintenance activities. Maintenance would be occasional and would not require a large number of staff who could contribute to roadway congestion. The minimal number of trips generated by operation of Pure Water would not result in conflict with or obstruction of a program, plan, ordinance, or policy addressing the circulation system, such as those contained in the local jurisdictions' general plans. In addition, permanent aboveground facilities, such as treatment facilities and pump stations, would be contained within their respective properties outside of the ROW, while conveyance pipelines would be located below ground. These facilities would therefore not have the potential to conflict with or obstruct implementation of a program, plan, ordinance, or policy addressing the circulation system. Impacts would be **less than significant.**

Project-Level Analysis

Construction

The information and analysis presented in the *Program-Level Analysis* section are also applicable to the project-level components. No additional analysis is required.

Operations

The Joint Treatment Site, specifically the AWP Facility and Workforce Training Center, would be the main traffic-generating permanent facilities of Pure Water. The AWP Facility is projected to have a total of 194 employees, of which 54 would be operations staff. Based on the shifts for operations staff, only half of them would be at the AWP Facility on any given day, so there would be a maximum of 167 employees at the AWP Facility on any given day. As such, it is anticipated that the AWP Facility would have approximately 167 employees, 10 visitors, and 30 chemical deliveries per day, and the Workforce Training Center is anticipated to have 31 trainees per day. The long-term traffic generated by the operation of the AWP Facility and Workforce Training Center would be minimal compared with the average daily traffic volumes for roadways adjacent to the AWP Facility and Workforce Training Center. As such, operation of the Joint Treatment Site is not anticipated to conflict with programs, plans, ordinances, or policies addressing the circulation system. Trip generation associated with the backbone pipeline would be limited to inspection and maintenance activities. Maintenance would be occasional and would not require a large number of staff. As the pipeline would be below ground, it would not have the potential to conflict with programs, plans, ordinances, or policies addressing the circulation system. Impacts would be **less than significant.**

5.11.5.2 Topic 2: Vehicle Miles Traveled

Would Pure Water conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Methodology

CEQA Guidelines Section 15064.3(b) identifies criteria for evaluating transportation impacts. Specifically, the guidelines state VMT exceeding an applicable threshold of significance may indicate a significant impact. According to CEQA Guidelines Section 15064.3(b), a lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT.

Construction

CEQA VMT assessment is intended to focus on the long-term, permanent transportation impacts related to the generation of automobile trips and the opportunities for alternative modes of transportation (public transit, walking, bicycling) associated with a development project (OPR 2018). Neither the OPR Technical Advisory on Evaluating Transportation Impact in CEQA (Technical Advisory; 2018) for SB 743 nor any jurisdiction within the Pure Water area specifies requirements for construction VMT assessments. However, for disclosure purposes, a quantitative analysis of construction VMT associated with Pure Water components analyzed at the project level is provided below.

Operations

The Joint Treatment Site, located in the City of Carson, would be the primary VMT-generating component of Pure Water's operations. Methodology on the VMT assessment for Joint Treatment Site operations is therefore based on OPR guidance and City of Carson thresholds, as discussed below.

Governor's Office of Planning and Research

In December 2018, OPR published its Technical Advisory in response to SB 743. This document includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion (OPR 2018). The VMT threshold guidance in OPR's Technical Advisory was based upon the CARB document titled 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (CARB 2019). Consistent with that guidance, one of the thresholds for project-generated VMT is whether a project would result in a VMT per service population 15 percent below the "existing conditions" VMT per service population. As explained in the Technical Advisory (OPR 2018):

> "Based on OPR's extensive review of the applicable research, and in light of an assessment by the CARB quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold."

City of Carson

The City of Carson adopted thresholds of significance for purposes of analyzing transportation impacts under CEQA. These thresholds include screening criteria by which a project could be presumed to have a less-than-significant impact. The six screening criteria are: project size, locally serving retail, project

located in a low VMT area, transit proximity, affordable housing, and transportation facilities. The "small project" screening criterion, measured by number of daily trips generated, is a net increase of 110 or fewer daily vehicle trips. This criterion is consistent with the OPR Technical Advisory (OPR 2018).

If a project cannot be screened out by one of the six screening criteria, the project must be addressed using the City of Carson's VMT methodology, which compares a project's average VMT per employee with the average VMT per employee for the City of Carson. The project's VMT impact would be considered less than significant if the project's average VMT per employee is at least 15 percent below the City's average, consistent with OPR's guidance. For example, if the City's average VMT per employee is 100, the project's average VMT per employee must be 85 or less in order to be considered as less than significant. This threshold is the threshold used to assess VMT impacts associated with operation of the Joint Treatment Site.

Program-Level Analysis

Construction

As discussed above, CEQA VMT assessment is intended to focus on the long-term, permanent transportation impacts related to the generation of automobile trips and the opportunities for alternative modes of transportation (public transit, walking, bicycling) associated with a development project (OPR 2018). VMT measures how much actual travel (additional miles driven) a proposed project would create on California roads. VMT is a measure of the transportation system's impact on the climate, the environment, and human health. Neither OPR nor any jurisdiction in the local area requires an evaluation of VMT impacts during construction. As such, construction VMT analysis for Pure Water's project-level components is provided below under *Project-Level Analysis* for disclosure purposes only, and **no significance determination is required**.

Operations

The primary VMT-generating components of Pure Water would be the AWP Facility and Workforce Training Center at the Joint Treatment Site, which would involve daily staff trips, trainee trips, and visitor trips. Detailed assessment of VMT associated with the Joint Treatment Site is provided below under *Project-Level Analysis.* Operation of other Pure Water components would involve minimal trips for inspection and maintenance activities. As such, operational VMT impacts would be **less than significant**.

Project-Level Analysis

Construction

Construction VMT analysis for Pure Water's project-level components is provided below for disclosure purposes.

Joint Treatment Site

VMT associated with construction at the Joint Treatment Site would occur in relation to worker commute trips, equipment and materials delivery trips, and haul truck trips for spoils disposal. The total construction VMT throughout the construction period for the Joint Treatment Site is estimated at approximately 34.2 million VMT (72.4 percent auto traffic and 27.6 percent truck traffic), or 14,950 VMT per day on average. For context, the daily VMT in the SCAG region is approximately 490 million VMT,

and the daily VMT within a one-mile buffer of the Joint Treatment Site (without project) is approximately 1.0 million VMT. Therefore, the daily construction VMT for the Joint Treatment Site represents only 0.003 percent of daily VMT in the SCAG region, and approximately 1.5 percent of the daily VMT within a one-mile buffer of the Joint Treatment Site (without project). The addition of Joint Treatment Site construction VMT has a negligible effect on VMT. Construction VMT analysis for Pure Water's project-level components is for disclosure purposes only, and **no significance determination is required**.

Backbone Conveyance System

Construction of the backbone conveyance system would affect VMT in two ways: (1) through generation of construction trips (predominantly construction heavy vehicles and construction worker automobile trips to and from the construction site) and (2) through traffic diversions to alternative routes due to construction-related lane closures. To provide a conservative VMT analysis, an assessment year of 2030 was selected because that is when most reaches of the backbone pipeline are planned to be under construction concurrently and would likely represent the greatest potential for overall trip disruption. Year 2030 forecasts from SCAG's RTP travel demand model were therefore used as the basis for the traffic volumes for the traffic diversion analysis.

Construction-related vehicle trips associated with the backbone conveyance system would be comprised of light vehicle trips for construction workers commuting to and from sites, truck trips for construction equipment and materials moving to and from original source locations to staging areas and then to work sites, and haul truck trips to transport construction spoils to landfills. Roadway trenching, which is the primary construction method that causes traffic to redistribute, would be used for approximately half of the backbone alignment, occurring in five of the eight backbone alignment reaches. In practice, it is unlikely that all five backbone pipeline reaches would be under construction concurrently. Refer to Appendix J for detailed methodology on how the quantity and distances for the various types of construction-related trips were developed.

The SCAG RTP model was used to determine the change in VMT due to traffic diversion. This regional model can comprehensively estimate and assess the extent to which traffic could potentially be diverted and "reassigned" to alternative routes in the highway network as a direct result of reduced roadway capacity and reduced speeds during the construction period.

The total construction VMT throughout the entire construction period for the backbone conveyance system is approximately 31.0 million VMT (37.3 percent auto traffic and 62.7 percent truck traffic), or 61,200 VMT per day. For context, the daily VMT in the SCAG region is approximately 490 million VMT, and the daily VMT within a one-mile buffer of the backbone alignment (without project) is approximately 18.9 million VMT. Therefore, the daily construction VMT for the backbone conveyance system represents only 0.01 percent of daily VMT in the SCAG region, and 0.3 percent of the daily VMT within a one-mile buffer of the backbone alignment (without project). The addition of backbone conveyance system construction VMT would have a negligible effect on VMT. Construction VMT analysis for Pure Water's project-level components is for disclosure purposes only, and **no significance determination is required**.

Operations

Joint Treatment Site

For operation of the Joint Treatment Site, a quantitative analysis was performed for VMT. The main trip-generating operational activities would be staff, trainees, and visitors commuting to and from the AWP Facility and Workforce Training Center at the Joint Treatment Site in the City of Carson. The AWP Facility would be located on the west side of Main Street between Sepulveda Boulevard and Lomita Boulevard. The Workforce Training Center would be located on the north side of Sepulveda Boulevard, west of Main Street. It is anticipated that the AWP Facility would have approximately 194 employees, 10 visitors, and 30 deliveries daily. Of the 194 employees, 54 would be operations staff, who are anticipated to work half of the week in 12-hour shifts. As a result, only half of the operations staff (27 employees) would be onsite on any given day. Therefore, it is anticipated that there would be no more than 167 employees at the AWP Facility on any given day. The Workforce Training Center is anticipated to have 31 trainees per workday.

The Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA 2024) was used to quantify VMT reduction from measures identified in the Metropolitan 2022 CAP. The following vehicle commute reductions for the Joint Treatment Site are quantified below:

- CAP Measure Employee Commute-1: Public Transportation Subsidy: T-9 Implement Subsidized or Discounted Transit Program: 5.5 percent reduction in commute VMT.

- CAP Measure Employee Commute-2: Vanpool: T-11 Provide Employer-Sponsored Vanpool: 10.0 percent reduction, which is half of the program potential of 20.4 percent reduction in commute VMT.

- CAP Measure Employee Commute-4: Alternative Transportation Benefits: T-5 Implement Commute Trip Reduction Program (Voluntary): 4.0 percent reduction in commute VMT.

A quantitative assessment of daily vehicle trips generated at the AWP Facility and Workforce Training Center was developed. The SCAG model does not account for employees utilizing walking and bicycling commute options supported through Metropolitan's CAP measures to incentivize more sustainable commutes. As depicted in **Table 5-11.1** below, incorporation of the CAP measures reduces the number of daily trips from employees from 152 daily roundtrips to 122 daily roundtrips.

After accounting for trainees, visitors, and deliveries, and Metropolitan's programs for staff commute reduction and the resulting level of vehicle usage for commuting, the Joint Treatment Site is expected to generate 380 trips per day as shown in **Table 5.11-1**. The Joint Treatment Site would generate more than 110 new trips per day and can therefore not be screened out using the "small project" screening criterion utilized by the City of Carson. As such, the Joint Treatment Site's operational VMT impact is assessed using the City of Carson's VMT methodology, which compares a project's average VMT per employee with the average VMT per employee for the City of Carson.

Table 5.11-1
JOINT TREATMENT SITE DAILY TRIPS

Average Daily Trips	Daily Staff/Trips
AWP Facility	
AWP Facility Total Staff[1]	194 Staff
Less 50% of 54 operations Staff (on any given day)[2]	(27 Staff)
AWP Facility Daily Staff	167 Staff
Vehicle Occupancy	1.1 Staff/Vehicle
Daily Staff Vehicle Round Trips without CAP Measures	**152 Trips**
CAP Measure Employee Commute-1: Public Transportation Subsidy (5.5%)[3]	(9 Staff)
CAP Measure Employee Commute-2: Vanpool (10%)	(17 Staff)
CAP Measure Employee Commute-4: Alternative Transportation Benefits (4%)	(7 Staff)
Staff Commuting by Auto	134 Staff
Vehicle Occupancy	1.1 Staff/Vehicle
Daily Staff Vehicle Round Trips with CAP Measures	**122 Trips**
Daily Delivery Round Trips[4]	30 Trips
Daily Visitor Round Trips	10 Trips
Daily Delivery and Visitor Vehicle Round Trips	**40 Trips**
Daily AWP Facility Round Trips	**162 Trips**
Workforce Training Center	
Daily Workforce Training Center Trainees	31 Trainees
Vehicle Occupancy	1.1 Trainees/Vehicle
Daily Workforce Training Center Round Trips without CAP Measures	**28 Trips**
Total	
Daily Vehicle Round Trips	**190 Trips**
Daily Vehicle One-Way Trips	**380 Trips**

Source: Iteris 2025

1 Includes staff for the AWP Facility pump station.

2 Half of the 54 operations staff are onsite on any given day.

3 Based on the American Community Survey 2021, US Census Bureau, approximately 5 percent of commuters use transit for commute trips in Los Angeles County.

4 30 delivery trucks per day are not included for VMT calculation purposes.

To calculate the total VMT generated at the Joint Treatment Site, the number of trips for workers, trainees, and visitors per day was multiplied by the average VMT per employee for the SCAG model traffic analysis zone (TAZ) within which the Joint Treatment Site is located (TAZ 2132700). The average VMT per employee in TAZ 2132700 was calculated from the SCAG model by summing the length of all trips either originating or ending within the TAZ and dividing this number by the number of employees within the TAZ. The calculated average VMT per employee for TAZ 2132700 is 22.4 VMT. By applying this average to the Joint Treatment Site's 122 worker commute trips, 10 visitor trips, and 28 trainee commute trips, the total daily VMT generated by the Joint Treatment Site would be 3,584 VMT. It should be noted that trucks are not included for the purpose of VMT calculations since these are excluded from VMT CEQA requirements under SB 743.

The VMT per employee for the Joint Treatment Site was then calculated by dividing this total VMT (3,584) by the total number of workers, visitors, and trainees regardless of their commute mode. When the 3,584 VMT is divided by 167 daily onsite workers, 10 daily visitors, and 31 daily trainees, the

automobile VMT per employee[1] value is 17.23, which is 25.4 percent below the average VMT per employee for the City of Carson of 23.1 VMT (also calculated using the SCAG model). A summary of these calculations is provided in **Table 5.11-2.** Based on the City of Carson's project VMT threshold of at least 15 percent below the baseline City of Carson average VMT per employee, the long-term VMT for Joint Treatment Site operations would have a less-than-significant impact under CEQA Guidelines Section 15064.3 with Metropolitan's vehicle commute reduction program. Impacts would therefore be **less than significant.**

Table 5.11-2
JOINT TREATMENT SITE DAILY VMT PER EMPLOYEE WITH COMMUTE REDUCTION MEASURES

Category	AWP Worker	AWP Visitor	Workforce Training Center Trainee	Total
Average Auto VMT per employee (SCAG Model)	22.4			
Before Commute Reduction Program and Vehicle Occupancy Trip Reduction				
# of Employees	167	10	31	208
Auto VMT	3,741	224	694	4,659
After Commute Reduction Program and Vehicle Occupancy Trip Reduction				
# of Auto Trips	122	10	28	160
Auto VMT	2,733	224	627	3,584
Total Auto VMT [A]				**3,584**
Total # of Employees[1] [B]				**208**
Average Automobile VMT per Employee [A]/[B]				**17.23**
City of Carson Average VMT per Employee (SCAG Model)				23.1
VMT Threshold (15% below City Average)				19.6
Percent of Average Automobile VMT per Employee below City Average				25.4%
Significant Impact Based on City of Carson Guidelines				***No***

Source: Iteris 2025
[1] For the purposes of this calculation, workers, visitors, and trainees are all characterized as employees.
SCAG = Southern California Association of Governments; VMT = vehicle miles travelled

Backbone Conveyance System

Trip generation associated with the backbone conveyance system would be limited to maintenance, patrolling, and inspection trips along the pipeline and at the pump stations. Such trips would be occasional and would not generate substantial VMT. As such, operational VMT impacts associated with the backbone conveyance system would be **less than significant**.

[1] For the purposes of this calculation, workers, visitors, and trainees are all characterized as employees.

5.11.5.3 Topic 3: Traffic Hazards

Would Pure Water substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Program-Level Analysis

Construction

Construction of Pure Water's various facilities and components, particularly conveyance facilities within roadways, would have the potential to result in traffic hazards through (1) work within roadways and (2) traffic generated along roadways, which could result in the presence of incompatible uses. Construction zones that include vehicles, equipment, and materials could create road hazards for motorists, bicyclists, and pedestrians. Construction could also result in damage to roads and sidewalks, potentially creating uneven surfaces for these users. In addition, slow-moving trucks that deliver and remove materials and debris would enter and exit public streets, which could create hazards to motorists, bicyclists, and pedestrians.

As described in Section 5.11.4, Metropolitan would implement TCPs and/or TMPs in accordance with **TRA-EC-1** and coordinate with each applicable jurisdiction. The TCPs and/or TMPs would manage traffic flow in and around construction sites through measures such as installing warning and detour signs, drafting lane closure procedures, and placing traffic cones to guide drivers indicating potential road hazards or detours, which would allow for continued and safe access for vehicles, bicyclists, and pedestrians. New points of ingress or egress created for construction access would comply with standard traffic design protocols. If unanticipated damage to roads, sidewalks, trails, and/or medians occurs, the construction contractor would coordinate with Metropolitan and corresponding local jurisdiction to ensure that the damage is repaired in a timely manner in accordance with applicable agency standards. Roads and/or driveways disturbed by construction activities or construction vehicles would be properly restored to ensure long-term protection of road surfaces. Therefore, construction-related impacts would not result in a substantial increase in hazard due to a geometric design feature or incompatible uses, and impacts related to traffic hazards would be **less than significant**.

Operations

Once constructed, Pure Water's conveyance pipelines would be below ground. Permanent aboveground facilities, such as treatment facilities and pump stations, would be contained within their respective properties outside of the ROW. New points of permanent facility ingress or egress may be created, but would not result in a new geometric design feature that would increase hazards as they would comply with standard traffic design protocols. All applicable design plans would require approval by the local jurisdiction. As such, operational impacts related to traffic hazards would be **less than significant**.

Project-Level Analysis

The information and analysis presented in the *Program-Level Analysis* section are also applicable to the project-level components. No additional analysis is required.

5.11.5.4 Topic 4: Emergency Access

Would Pure Water result in inadequate emergency access?

Program-Level Analysis

Construction

Construction of Pure Water's conveyance facilities within roadways could result in lane closures, street closures, intersection closures, detours, and/or traffic delays, which could interfere with emergency access. Extended lane closures may be necessary depending on the construction method and construction schedule. However, since construction of the conveyance facilities would continually progress along the linear alignments, impacts to local emergency access at any one location along the conveyance alignments would be temporary.

In addition, implementing a TCP and/or a TMP (per **TRA-EC-1**) would provide traffic control at the access points to construction sites and would facilitate site access for emergency vehicles. The TCP and/or TMP would be approved by the local jurisdiction and identify procedures for informing and coordinating with relevant police and fire departments on construction locations and would identify potential detour routes.

Due to the temporary nature of construction impacts, Pure Water would not result in inadequate emergency access and impacts would be **less than significant.**

Operations

Permanent operation of the Pure Water components would not result in inadequate emergency access. Once constructed, Pure Water's conveyance pipelines would be below ground. Permanent aboveground facilities, such as treatment facilities and pump stations, would be contained within their respective properties outside of the ROW and regular daily operation would not result in detours, lane closures, street closures, or intersection closures. As such, operation impacts related to inadequate emergency access would be **less than significant**.

Project-Level Analysis

The information and analysis presented in the *Program-Level Analysis* section are also applicable to the project-level components. No additional analysis is required.

5.11.6 Level of Significance Before Mitigation

Impacts related to conflict with a program, plan, ordinance, or policy; VMT; traffic hazards; and emergency access would be **less than significant**.

5.11.7 Mitigation Measures

Impacts associated with transportation would be less than significant; therefore, no mitigation measures are required.

5.11.8 Level of Significance After Mitigation

Impacts associated with transportation would be **less than significant without mitigation**.

5.11.9 References

California Air Pollution Control Officers Association (CAPCOA). 2024. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. October. Available at: https://www.caleemod.com/documents/handbook/full_handbook.pdf.

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5.12 TRIBAL CULTURAL RESOURCES

This section addresses the impacts of Pure Water to TCRs. The following discussion includes a description of existing conditions, a summary of applicable laws and regulations, and an evaluation of potential impacts with and without mitigation. This section also includes a summary of the Tribal consultation conducted by Metropolitan. Copies of communications from the Tribal consultation process are provided as Appendix K. As noted at the beginning of this chapter, all potential impacts associated with construction and operation of Pure Water's facilities and components have been analyzed at the program level, with further analysis for certain facilities and components where sufficient information is available. However, because the TCR consultation process addressed Pure Water as a whole, the program-level analysis describes the entire consultation; there is no additional project-level analysis.

5.12.1 Existing Conditions

The Pure Water area is located within the traditional territories of numerous Native American Tribal groups. Metropolitan received formal notification for consultation from the following four California Native American tribes that are traditionally and culturally affiliated with the geographic area of Pure Water:

- Gabrieleño Band of Mission Indians-Kizh Nation;
- San Gabriel Band of Mission Indians;
- Soboba Band of Luiseño Indians; and
- Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians).

5.12.2 Regulatory Framework

5.12.2.1 Federal

No existing federal laws or regulations related to TCRs are applicable to Pure Water.

5.12.2.2 State

California Public Resource Code Section 20174

PRC Sections 21074(a)(1) and (2) define TCRs as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are either: (1) included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources; or (2) a resource that is determined to be significant by a CEQA lead agency, in its discretion and supported by substantial evidence, including the significance of the resource to a California Native American tribe. Pursuant to PRC Section 21074(b), a cultural landscape that meets the criteria of PRC Section 21074(a) can also be a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. PRC Section 21074(c) also provides that a historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in Section 21083.2(g), or a "nonunique archaeological resource" as defined in Section 21083.2(h), may also be a TCR if it conforms with the criteria of PRC Section 21074(a).

California Public Resource Code Sections 21080.3.1 and 21080.3.2

PRC Section 21080.3.1(b-d) requires that, within 14 days of a lead agency determining an application for a project is complete or a decision by a public agency to undertake a project, the lead agency must provide formal notification to the designated contact, or a tribal representative, of California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency of projects within their geographic area of concern. Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification, and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Section 21080.3.1[d-e]).

Pursuant to PRC Section 21080.3.2(b), consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect to a TCR exists; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

California Public Resources Code Section 21082.3(c)

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of a TCR, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Pursuant to PRC Section 21082.3(c)(2)(B), confidentiality does not apply to data or information that are or become publicly available, are already in lawful possession of the project applicant before the provision of the information by the California Native American tribe, are independently developed by the project applicant or the applicant's agents, or are lawfully obtained by the project applicant from a third party that is not the lead agency, a California Native American tribe, or another public agency.

5.12.3 Significance Thresholds

The following criterion from Appendix G of the CEQA Guidelines is used as a threshold of significance to determine the impacts of Pure Water as related to TCRs. Pure Water would have a significant impact if it would:

1. Cause a substantial adverse change in the significance of a TCR, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    a. listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or

b. a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

5.12.4 Environmental Commitments

As described in Section 5.0.2.2, ECs represent up-front measures that Metropolitan would undertake as part of responsible design and environmental stewardship. The ECs relevant to this environmental resource category are listed below and are considered within the impact analysis to determine the extent of potential impacts prior to mitigation.

GM-EC-1 **Environmental Awareness Training.** The Contractor shall attend an Environmental Awareness Training with Metropolitan's construction management team and designated environmental monitors (i.e., qualified biologist, archaeologist, Native American monitor, paleontologist, hazardous materials specialist, as applicable). An Environmental Awareness Training program shall inform all employees of the sensitive resources known or with potential to occur in the local area; the sensitivity of the area in which they will be working; and environmental measures and requirements to comply with project approvals and environmental permits and regulations.

5.12.5 Impact Analysis

5.12.5.1 Topic 1: Tribal Cultural Resources

Would Pure Water cause a substantial adverse change in the significance of a TCR, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. listed on or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or

b. a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Program-Level Analysis

The analysis in this section is based on historic maps, newspaper articles, and other documentation provided by the Gabrieleño Band of Mission Indians-Kizh Nation, records searches from the South Central Coastal Information Center, ethnographic and historic accounts (e.g., McCawley 1996) and the results of the Tribal consultation process conducted by Metropolitan. The consultation process was conducted for Pure Water as a whole; therefore, the impact analysis is presented for the entire program. Copies of communications from the Tribal consultation process are provided in Appendix K.

Metropolitan initiated TCR consultation on October 21, 2022, by mailing letters, pursuant to PRC Section 21083.3.1, via certified mail to the following four Native American Tribes that have requested notification of Metropolitan projects in the geographic area in which they are traditionally and culturally affiliated:

- Gabrieleño Band of Mission Indians-Kizh Nation;
- San Gabriel Band of Mission Indians;
- Soboba Band of Luiseño Indians; and
- Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians).

Each letter included maps of the proposed Pure Water components, as well as results of the California Historical Resources Information System search, Sacred Lands File search, and field surveys. Furthermore, the letters stated that Tribal contacts had 30 days from receipt of the letter to request, in writing, consultation regarding Pure Water. The consultation request letters were received by the four Native American Tribes on October 24 and October 25, 2022, based on receipts from the certified mailings.

No Tribe responded to the certified mail consultation request letter. Though not required under PRC Section 21080.3.1 on December 12, 2022, Metropolitan staff contacted the identified Tribal representative for each of the four Tribes and described Pure Water and the general alignment and location of its components, and requested verification as to whether each Tribe would like to participate in consultation under PRC Section 21080.3.1. A summary of consultation efforts with each Tribe is provided below.

Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians)

Metropolitan staff contacted the Yuhaaviatam of San Manuel Nation administration office via telephone and requested to speak with the Tribe's identified representative, Ms. Lee Clauss, for TCR consultation on December 12, 2022. The office informed Metropolitan that Ms. Clauss was no longer employed with the Tribe. Metropolitan staff requested to speak with the Tribe's cultural resource director, Ms. Jessica Mauck, to ascertain whether there were any questions or concerns from the Tribe about Pure Water. Voicemail messages were left for Ms. Mauck on December 14, 2022, and December 21, 2022. The voicemail messages described Pure Water with a request for a call back to discuss the Tribe's interest in consulting with Metropolitan for TCR concerns or impacts. No response was received.

Soboba Band of Luiseño Indians

Metropolitan staff contacted the Soboba Band of Luiseño Indians' Cultural Resource Director, Mr. Joseph Ontiveros, via telephone on December 12, 2022. Mr. Ontiveros described the location of a sensitive Tribal resource, but upon clarification that the resource was several miles from the proposed Pure Water area, declined the opportunity to consult on Pure Water and deferred to the Gabrieleño Tongva (San Gabriel Band of Mission Indians), as a Tribe that is traditionally connected to the Pure Water area.

San Gabriel Band of Mission Indians

Metropolitan staff contacted the San Gabriel Band of Mission Indians via telephone and requested to speak with the Tribe's identified representative, Mr. Anthony Morales, for TCR consultation on December 12, 2022. Mr. Morales requested a brief description of Pure Water and general location of the proposed facilities. Mr. Morales did not specify whether the Tribe would like to consult with Metropolitan regarding Pure Water pursuant to PRC Section 21083.3.1, but referred staff to another Tribal member, Mr. Adrian Morales, the Tribe's Cultural Resource Manager, for further guidance. An email address was provided for contact.

Metropolitan staff emailed Mr. Adrian Morales on December 12, 2022, and described Pure Water and the outreach for consultation, and requested a response. An email reply was received by Metropolitan on December 14, 2022, with a request for consultation. Metropolitan sent emails to Mr. Adrian Morales on December 21, 2022, and January 9, 2023, requesting potential dates and times to meet to conduct consultation for Pure Water.

Metropolitan received an email from Mr. Adrian Morales on February 3, 2023, with a letter attachment. The Tribe's letter described several resources and proposed mitigation measures. The letter did not provide information regarding the context, distance, or location of resources in relation to the Pure Water area or information on the nature of potential impacts. Some resources described in the Tribe's letter are known to be several miles distant from the proposed Pure Water components. Metropolitan sent a reply via email on February 6, 2023, acknowledging receipt of the email with letter attachment and requested a phone number, in addition to the email address on file, and a meeting to discuss the resources described by the Tribe. No response to the email was received by Metropolitan.

Subsequently, on April 19, 2023, Metropolitan staff left a voicemail message with the San Gabriel Band of Mission Indians Tribal office. The voicemail message identified Pure Water as the topic, referenced the Tribe's letter to Metropolitan and resources described in the Tribe's letter, and specified that Metropolitan was seeking clarification and requesting further consultation. To date, no response has been received.

Gabrieleño Band of Mission Indians-Kizh Nation

Metropolitan staff contacted the Gabrieleño Band of Mission Indians-Kizh Nation via telephone and requested to speak with the Tribe's identified representative, Mr. Andrew Salas, for TCR consultation on December 12, 2022. Mr. Salas requested a brief description of Pure Water and general location of the proposed facilities. Mr. Salas stated that the Tribe would like to consult with Metropolitan for TCRs on Pure Water.

Metropolitan staff coordinated with the Gabrieleño Band of Mission Indians-Kizh Nation on a regular basis between December 2022 and February 2024, with approximately 70 emails, phone calls, or meetings. Metropolitan held three consultation meetings with the Tribe during that time, two via phone (on February 15, 2023, and January 25, 2024) and one in-person meeting (on May 23, 2023). The goals of the consultation meetings and communications were to listen to the Tribe, collect information regarding potential TCRs within the Pure Water area, understand Tribal concerns pertaining to Pure Water, and discuss potential feasible avoidance, minimization, and mitigation strategies for potential impacts to TCRs. Tribal representatives during consultation were Mr. Salas and Mr. Matthew Tuitemez, Tribal Biologist.

The Gabrieleño Band of Mission Indians-Kizh Nation expressed during the consultation that it considers all of Southern California, including the Pure Water area, to be of significance to the Tribe. The Tribe also expressed that the locations of the ethno-historic village sites of their ancestors were located in natural resource-rich areas and that the natural resources themselves, although largely not present in the current landscape, are part of their Tribal resources.

During consultation, Metropolitan participated with the Tribe in an effort to identify and map the locations of ethno-historic villages in the Pure Water area based on information provided by the Tribe and from information published by early ethnographers, historians, and archaeologists. In consultation meetings, the Tribe clarified that the location of ancestral village sites are not the only TCRs in the Pure Water area, and that the entire Pure Water area has the potential for previously unidentified TCRs.

The Gabrieleño Band of Mission Indians-Kizh Nation also identified a Native American burial site as a TCR during consultation meetings. In addition to a burial site, the Gabrieleño Band of Mission Indians-Kizh Nation also consider this to be a massacre site. A portion of this area is also a recorded archaeological site; however, the identified boundaries of the recorded archaeological site are located outside of the proposed Pure Water area. The site boundaries provided by the Tribe are larger than the recorded archaeological site boundaries and extend into the Pure Water impact area. However, no information was provided as to how the larger site boundary was determined.

During consultation meetings, Metropolitan acknowledged that the Gabrieleño Band of Mission Indians-Kizh Nation consider all of Southern California, including the Pure Water area, as a Tribal resource. However, in the context of CEQA, the definition of a TCR is specifically focused on a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, local register, or as determined by the lead agency and supported by substantial evidence (PRC Section 21074).

During the course of the Tribal consultation process, Metropolitan did not receive any information that assisted it in identifying how the Pure Water area as a whole could be eligible for the CRHR or local register. Thus Metropolitan, while acknowledging that Tribal cultural resources have a different, and broader meaning from a Tribal perspective than the definition of a TCR in the CEQA statute, has concluded that there are ancestral Tribal village sites and a known burial site, which the Gabrieleño Band of Mission Indians-Kizh Nation considers to be a massacre site, that hold cultural and Tribal value to the Gabrieleño Band of Mission Indians-Kizh Nation, are geographically defined, and would be eligible for the CRHR under Criterion 4 for their potential to yield information important to the prehistory or history of the local area, California, or the nation within the Pure Water area. These sites are considered to be TCRs and information regarding their locations is confidential. If encountered, impacts to such resources would be considered **significant**.

Project-Level Analysis

As indicated earlier, because the consultation process and resulting TCR identification and assessment of impacts were conducted for Pure Water as a whole, including program-level and project-level components, the information and analysis presented in the *Program-Level Analysis* section above are also applicable to the project-level components. No additional analysis is required.

5.12.6 Level of Significance Before Mitigation

Potential impacts to TCRs are considered **significant**.

5.12.7 Mitigation Measures

The following mitigation measures would be required to address potentially significant impacts associated with TCRs.

TCR-MM-1 **Minimization of Impacts to Tribal Cultural Resources.** Metropolitan shall construct Pure Water in a manner that avoids or minimizes physical disturbance of Tribal Cultural Resources (TCRs) identified in Appendix K to the extent feasible. Efforts have been made during planning of Pure Water to identify locations where construction activities have the potential to damage known TCRs. Metropolitan shall conduct pre-construction surveys to verify their presence and/or extent and coordinate with the Gabrieleño Band of Mission Indians-Kizh Nation to modify Pure Water construction activities to avoid physically disturbing these resources to the extent feasible. If complete avoidance is not feasible, Metropolitan shall work with the construction contractor to minimize physical disturbance to the TCR(s).

TCR-MM-2 **Tribal Monitor.** Metropolitan shall retain a Native American (Tribal) Monitor from or approved by the Gabrieleño Band of Mission Indians-Kizh Nation to monitor construction-related ground-disturbing activities. Tribal monitoring shall occur where ground-disturbing activities would encounter Holocene-age soils (soils present at the time of known human occupation of Southern California). Tribal monitoring shall not occur in areas that are documented as imported fill material or within soils determined to be older than known human occupation of Southern California. The Tribal Monitor shall complete daily monitoring logs that will describe the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials encountered, and any other facts, conditions, materials, or discoveries of significance to the Tribe and provide the logs to Metropolitan. Monitor logs shall identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., as well as any discovered Native American (ancestral) human remains and burial goods.

TCR-MM-3 **Unanticipated Discovery of Tribal Cultural Resources.** Should an inadvertent discovery of a TCR occur during construction, the contractor shall not disturb the resource and shall immediately cease all work within 100 feet of the discovery, notify Metropolitan's construction manager, and protect the discovery area, as directed by the construction manager. The Tribal Monitor and Project Archaeologist shall assess the significance of the discovery, and the Metropolitan construction manager shall designate an area surrounding the discovery as a restricted area. The Gabrieleño Band of Mission Indians-Kizh Nation shall be immediately notified to recover and obtain any inadvertently discovered TCRs. The Contractor shall not enter or work in the restricted area until treatment or recovery of the TCR is complete and the construction manager provides authorization.

In addition to the above mitigation measures, **CUL-MM-2** through **CUL-MM-4** also are applicable to potential impacts to TCRs. If human remains are encountered, they will be addressed in accordance with the requirements specified by California Health and Safety Code Section 7050.5 and PRC Section 5097.98 (see Section 5.3.2.2 for details).

5.12.8 Level of Significance After Mitigation

Despite implementation of the above mitigation measures, because it is currently uncertain whether all impacts to TCRs would be feasible to avoid, impacts to TCRs are considered to be **significant and unavoidable**.

5.12.9 References

McCawley, W. 1996. The First Angelinos: The Gabrielino Indians of Los Angeles. April 1.

6.0 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

This chapter of the EIR provides information regarding environmental effects that were determined not to be significant and why they do not require in-depth analysis in this EIR. The following environmental resource categories were analyzed in accordance with Appendix G of the CEQA Guidelines (CCR Section 15000 *et seq.*), and it was determined that Pure Water would result in no impacts or less-than-significant impacts on the environment:

- Aesthetics
- Agriculture and Forestry Services
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

Sections 6.1 to 6.8 briefly summarize the analyses that led to these conclusions.

6.1 AESTHETICS

Would Pure Water have a substantial adverse effect on a scenic vista?

There are several definitions for "scenic vistas" but for CEQA purposes, a scenic vista can be defined as a view that possesses visual and aesthetic qualities of high value to the community. Scenic vistas can provide views of natural features as well as significant structures and buildings.

Construction of Pure Water's facilities and components would result in temporary visual changes in the immediate vicinity of the impact areas resulting from the presence of construction equipment and materials; however, construction activities would be temporary and would not significantly affect scenic vistas based on the size and scale of construction in any one location. As such, construction impacts associated with scenic vistas would be less than significant.

Following completion of construction, the backbone pipeline, the modified Azusa Pipeline, Phase 2 DPR pipeline, service connections, and non-potable water facilities would be located below ground and would have no impact on a scenic vista. Recharge facilities, including spreading facilities and injection wells, would not include large vertical structures that would have the potential to affect scenic vistas. Impacts related to these facilities would be less than significant. Pure Water's permanent, visible, above-ground facilities and components that would have the potential to have an adverse effect on a scenic vista include the AWP Facility, Workforce Training Center, and Warren Facility improvements at the Joint Treatment Site; Phase 1 DPR treatment facility at Weymouth WTP; and pump stations along the backbone pipeline, Azusa Pipeline, and DPR pipeline.

The Joint Treatment Site, including the AWP Facility, Workforce Training Center, and Warren Facility improvements, would include numerous new above-ground structures within and immediately adjacent to the existing Warren Facility, which is developed with wastewater treatment facilities (refer to **Figure 2-2**). The AWP Facility would be located on land that is predominantly vacant in the existing condition. Most proposed structures at the AWP Facility would have heights of approximately 20 to 30 feet above grade. Three structures (MF Facility, RO Facility, and CO_2 storage tanks) would have heights of approximately 45 feet above grade, and the tallest of the proposed structures (lime storage silos) are expected to have heights of approximately 56 feet above grade. The Workforce Training Center would be located on a site currently developed with a nursery and would have a structure height of approximately 20 feet above grade. The Warren Facility improvements would be located on a paved portion of the existing Warren Facility and would include a sidestream centrate treatment system with a structure height of approximately 26 feet above grade.

The Joint Treatment Site would be located in the City of Carson, which is primarily developed with industrial, residential, and commercial uses. The City's General Plan EIR (City of Carson 2022) identifies "scenic resources" for mostly undeveloped open space areas, including parks, sports fields, a golf course, a cemetery, and drainage courses with woodland vegetation. These types of resources in the vicinity of the Joint Treatment Site include the Wilmington Athletic Complex (a park, located approximately 700 feet southwest of the AWP Facility site at the intersection of Lomita Boulevard and Figueroa Street), Carriage Crest Park (located approximately 700 west of the Workforce Training Center site at the intersection of Sepulveda Boulevard and Figueroa Street), and Bixby Marshland (located approximately 1,200 feet east of the Workforce Training Center site at the intersection of Sepulveda Boulevard and Figueroa Street). Public views of the Wilmington Athletic Complex are currently afforded from Lomita Boulevard to the north, Eudora Avenue to the east, West Q Street to the south, and Figueroa Street to the west. Public views of Carriage Crest Park are currently afforded from Sepulveda Boulevard to the south and Figueroa Street to the west. Public views of the Bixby Marshland are currently afforded from I-110 to the west, Sepulveda Boulevard to the north, and Figueroa Street to the east. Structures located at the Joint Treatment Site would not be located between the scenic resources and their respective viewpoints; therefore, there would be no impact on these scenic vistas.

The Phase 1 DPR treatment facility for Pure Water would be located at Weymouth WTP in the City of La Verne. Weymouth WTP is currently developed with water treatment facilities. The Phase 1 DPR treatment facility would be located on an undeveloped portion of the Weymouth WTP site (refer to **Figure 4-6**). The primary structures at the Phase 1 DPR treatment facility would include a UV reactor building, chlorine dioxide generation building, and chlorine dioxide contact basin/treated water storage tank. The La Verne General Plan (City of La Verne 1998) designates several streets in the northern part of the city as significant scenic vistas and identifies 18 scenic view corridors located throughout the city. In the vicinity of the proposed Phase 1 DPR treatment facility, the view along Gladstone Street looking eastbound from its intersection with Damien Avenue towards Weymouth WTP and the view along Bonita Avenue looking eastbound from its intersection with Wheeler Avenue are identified as scenic view corridors. The viewshed of the scenic corridor along Gladstone Street includes the western side of the central portion of Weymouth WTP. The proposed Phase 1 DPR facilities, which would be located in the southern portion of the Weymouth WTP site, would not affect the portions of Weymouth WTP located within the scenic corridor or otherwise be visible from the scenic corridor due to distance and intervening structures. Similarly, given that Weymouth WTP is located on west side of Wheeler Avenue, views along Bonita Avenue looking eastbound from its intersection with Wheeler Avenue do not include Weymouth WTP and no impact to scenic vistas would result from the proposed Phase 1 DPR treatment facilities.

Similarly, while their exact locations are unknown, the pump stations along the backbone pipeline, Azusa Pipeline, and DPR pipeline would be located in developed and urbanized areas and are not expected to substantially affect scenic vistas. Therefore, operational impacts associated with Pure Water's permanent structures would be less than significant.

Would Pure Water substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

In 1963, the California State Legislature established the California Scenic Highway Program through SB 1467, which established the State's responsibility for the "protection and enhancement of California's natural scenic beauty by identifying those portions of the State highway system which, together with adjacent scenic corridors, require special conservation treatment" (Streets and Highways Code, Division 1, Chapter 2, Article 2.5, Section 260). There are no officially designated state scenic highways in the Pure Water area (Caltrans 2024). The closest scenic highway is SR 2 north of the City of La Cañada Flintridge, approximately 14 miles northwest of the backbone alignment. SR 89 north of I-210 in the City of Azusa, located approximately 0.7 mile from the backbone alignment, is designated as eligible to become a State scenic highway (Caltrans 2024). The Azusa Pipeline, which would be modified as part of Pure Water, crosses SR 89 and the proposed Phase 2 DPR pipeline would cross SR 89. However, modifications to the Azusa Pipeline and construction of the Phase 2 DPR pipeline would primarily occur within existing roadways and are not expected to damage scenic resources in proximity to I-210. As such, impacts would be less than significant.

In nonurbanized areas, would Pure Water substantially degrade the existing visual character or quality of public views of the site and its surroundings? If in an urbanized area, would Pure Water conflict with applicable zoning and other regulations governing scenic quality?

The Pure Water area is densely urban and highly developed. The Joint Treatment Site, including the AWP Facility, Workforce Training Center, and Warren Facility improvements, would be located on and adjacent to the Warren Facility, which is an existing wastewater treatment facility. The Warren Facility and AWP Facility site have a zoning designation of Heavy Manufacturing and a general plan land use designation of Heavy Industrial. The Workforce Training Center site has a City of Carson zoning designation of Residential Agricultural and a general plan land use designation of Light Industrial. The City of Carson intends to update its zoning code to conform to the 2040 General Plan adopted by the City in April 2023, which will assign a Light Industrial zoning designation to this property. Similarly, the Phase 1 DPR treatment facility would be located at Weymouth WTP, which is currently utilized for water treatment and has a zoning designation of Official and general plan land use designation of Community Facility/Freeway. The AWP Facility, Workforce Training Center, and Phase 1 DPR treatment facility would not conflict with applicable zoning and other regulations governing scenic quality, and impacts associated with these facilities would be less than significant.

While the exact locations of Pure Water's other permanent, visible, above-ground facilities and components, including pump stations along the backbone pipeline, Azusa Pipeline, and DPR pipeline and injection wells, are yet to be determined, these facilities would also be located in industrial/commercial areas and are not expected to conflict with applicable zoning and other regulations governing scenic quality. Spreading facility improvements would occur at existing spreading facilities and would therefore not conflict with applicable zoning and other regulations governing scenic quality. The backbone pipeline, modified Azusa Pipeline, Phase 2 DPR pipeline, service connections, and non-potable water

facilities would be located below ground and would not have the potential to conflict with applicable zoning and other regulations governing scenic quality. Impacts would, therefore, be less than significant.

Would Pure Water create a new source of light or glare which would adversely affect day or nighttime views in the area?

Construction activities for the backbone pipeline utilizing tunneling methods would occur during nighttime hours, requiring construction lighting. Such construction lighting would be set to direct light only to active work areas, which would be limited to launching and receiving shafts. This would avoid light and glare impacts on surrounding businesses and residences during the construction period. Moreover, nighttime construction activities and the associated use of lighting would be temporary for any given section of tunneling. As such, nighttime construction lighting would not create substantial sources of light that would affect day or nighttime views in the area. Impacts would be less than significant.

Pure Water's permanent, visible, above-ground facilities and components, including the AWP Facility, Warren Facility improvements, Workforce Training Center, pump stations, Phase 1 DPR treatment facility at Weymouth WTP, and injection wells, would include standard site lighting, such as security lighting. Lighting sources would be minimal, would be located at facilities in urbanized areas that contain existing sources of lighting, and would be directed away from residences and other sensitive uses. Solar panels proposed at the AWP Facility would be located on the roofs of various structures and would therefore not generate glare that would affect public views in the area. Other above-ground facilities and structures are not expected to be constructed of highly reflective materials that would generate glare in a manner that would affect public views in the area. The backbone pipeline, modified Azusa Pipeline, Phase 2 DPR pipeline, service connections, and non-potable water facilities would be located below ground and would not include permanent sources of light or glare. Similarly, spreading facilities are not expected to include lighting or other sources of glare; therefore, Pure Water would not introduce new permanent sources of light or glare that would adversely affect day or nighttime views. Impacts would be less than significant.

6.2 AGRICULTURE AND FORESTRY SERVICES

Would Pure Water 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 a non-agricultural use?

The Pure Water area is highly urbanized and is therefore classified primarily as Urban and Built-Up Land by the California Department of Conservation (DOC 2022a). Other classifications include Other Land in association with the Whittier Narrows Natural Area and Whittier Narrows Recreation Area and mineral extraction uses in the City of Irwindale, as well as Grazing Land in association with the Santa Fe Dam Recreation Area and foothills of the San Gabriel Mountains. A strip of Unique Farmland that is approximately one mile in length occurs along the backbone alignment within a utility easement corridor northwest of the intersection of I-605 and SR 60, within the City of Industry. This land is currently vacant (aside from overhead utility lines) and has general plan land use and zoning designations of Recreation and Open Space, which specifies the following allowable uses: commercial recreation such as golf courses, resorts, equestrian facilities, exposition centers; open space such as parks, trails, bikeways, indoor and outdoor recreational facilities, and interpretive centers; and commercial nurseries (City of Industry 2014). This land is not currently utilized for agricultural purposes

and is not specifically planned to be used for agricultural purposes in the future. In addition, construction of the backbone pipeline within this strip of Unique Farmland would be temporary. After completion of construction, the backbone pipeline would be located below ground and pre-existing conditions would be restored. Topsoil would be appropriately stored and replaced after completion of the construction activities. Therefore, Pure Water would not permanently convert this land designated as Unique Farmland to non-agricultural use or preclude future use of the land for agricultural uses (e.g., commercial nurseries, as allowed by the City of Industry General Plan). Impacts would be less than significant.

Would Pure Water conflict with existing zoning for agricultural use, or a Williamson Act contract?

As mentioned above, the backbone alignment routes through a strip of land within a utility easement that has a zoning designation of Recreation and Open Space, which allows for commercial nursery uses. However, this land is not enrolled in a Williamson Act contract, nor is it currently utilized for agricultural purposes. In addition, construction of the backbone pipeline would be temporary. After completion of construction, the backbone pipeline would be located below ground and pre-existing conditions would be restored. Topsoil would be appropriately stored and replaced after completion of the construction activities. As such, construction of the backbone pipeline in this location would not conflict with existing zoning for agricultural use. There is no land enrolled in a Williamson Act Contract within, adjacent to, or in the vicinity of the planned locations of the other Pure Water facilities and components (DOC 2022b). Impacts would be less than significant.

Would Pure Water conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 1220[g]), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?

The Pure Water facilities and components would occur on developed sites, on previously developed sites, within roadways, and within utility easement areas in a heavily urbanized area. Based on review of local zoning designations, there is no forest land, timberland, or timberland zoned Timberland Production within, adjacent to, or in the vicinity of the planned locations of the Pure Water facilities and components. As such, Pure Water would not conflict with zoning for forest land. No impact would occur.

Would Pure Water result in the loss of forest land or conversion of forest land to non-forest use?

The Pure Water facilities and components would occur on developed sites, on previously developed sites, within roadways, and within utility easement areas in a heavily urbanized area. There is no forest land within, adjacent to, or in the vicinity of the planned locations of the Pure Water facilities and components. As such, Pure Water would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Would Pure Water involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

As discussed within the responses to the preceding questions, the backbone alignment routes through a strip of land classified as Unique Farmland by the California Department of Conservation and designated as Recreation and Open Space by the City of Industry, which allows for commercial nursery uses. Construction of the backbone pipeline within this strip of land would be temporary. After completion of

construction, the backbone pipeline would be located below ground and pre-existing conditions would be restored. Therefore, Pure Water would not permanently convert this land to non-agricultural use or preclude future use of the land for agricultural uses (e.g., commercial nurseries, as allowed by the City of Industry General Plan). There is no forest land in the Pure Water area; therefore, Pure Water would not result in the conversion of forest land to non-forest use. Impacts would be less than significant.

6.3 MINERAL RESOURCES

Would Pure Water result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state or 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?

The CGS classifies the regional significance of the state's mineral resources in accordance with the Surface Mining and Reclamation Act of 1975 based on geologic appraisal of the mineral resource potential of the land. According to Figure 9.6, Mineral Resources, of the Los Angeles County General Plan (County of Los Angeles 2022), mapped mineral resource zones occur in the northern portion of the Pure Water area, primarily encompassing areas near the cities of El Monte, Irwindale, and Azusa, as well as farther east near the City of Claremont.

Past and current mineral extraction uses are present in the immediate vicinity of the backbone alignment in the City of Irwindale. As of 2008, there were six active quarries in the City of Irwindale, which are used for sand and gravel (i.e., construction aggregate) extraction. The City of Irwindale has adopted a quarry designation in its zoning code that is used to indicate areas where quarries and related sand and gravel industries are allowed to be located. The quarry zone recognizes the location of identified mineral deposits classified by the State Geologist and designated by the State Mining and Geology Board Reclamation Regulations as regionally significant and targets these areas for conservation and possible future extraction (City of Irwindale 2008).

The backbone alignment does not cross through land designated as being within the quarry zone, as indicated on the City of Irwindale Zoning Map (City of Irwindale 2018). One pump station along the backbone alignment may be located in the City of Irwindale; however, it is not anticipated that it would be located on land designated as a quarry zone based on the current extractive use of these areas, rendering development of a pump station on such land infeasible. There are no extractive uses located in the vicinity of the other pump stations along the backbone alignment (in the Whittier Narrows area) or the Joint Treatment Site. IPR recharge planned along the northern portion of the backbone alignment that is within a mineral resource zone would utilize the Santa Fe Dam Spreading Grounds and San Gabriel Canyon Spreading Grounds, which are existing recharge facilities that are not used for extractive uses.

Other proposed facilities and components planned in the northern portion of the Pure Water area where mineral resource zones are mapped (County of Los Angeles 2022) include the Phase 1 DPR treatment facility, modified Azusa Pipeline and associated pump stations, and Phase 2 DPR pipeline and associated pump station. The Phase 1 DPR treatment facility would be sited at Weymouth WTP where no mineral resource extraction occurs or is planned. The modified Azusa Pipeline and DPR pipeline would be located near past and current mineral extraction sites within the City of Azusa. However, the pipelines would be located within existing roadways and would therefore not be located within mineral extraction areas. The pump stations associated with the two pipelines are not anticipated to be located on mineral extraction sites due to past and current extractive uses of the sites, rendering development

of pump stations on such land infeasible (e.g., because the mine pits are located at a lower elevation than the pipelines would be). As such, installation of Pure Water facilities and components would not result in the loss of availability of a known mineral resource or mineral resource recovery site. No impact would occur.

6.4 POPULATION AND HOUSING

Would Pure Water induce substantial unplanned population growth in an area, either directly (for example, by proposed new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Implementation of Pure Water would not directly induce population growth because it does not propose new homes or businesses that would directly attract new residents to the area. Although construction of Pure Water would create temporary employment opportunities, the jobs created would be expected to be filled by the local labor pool/workforce. Operation of Pure Water would require permanent staffing, primarily for the AWP Facility. It is anticipated that the fully built-out AWP Facility (i.e., with DPR treatment), would involve approximately 194 permanent staff. These permanent positions are also expected to be filled by the local labor pool/workforce.

As discussed in detail in Section 8.1, *Growth Inducement*, Pure Water would not indirectly induce substantial population growth by providing a new source of potable water. The provision of this new water supply would support planned growth for the region and would serve as a supplemental source of reliable water during periods of drought or other anticipated strains on imported supplies. As such, impacts would be less than significant.

Would Pure Water displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Based on the planned locations of the proposed facilities and components, Pure Water would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Improvements at the Joint Treatment Site would be within and adjacent to the existing Warren Facility on land designated for industrial use that includes existing wastewater facilities and vacant land. The backbone pipeline, modified Azusa Pipeline, and DPR pipeline would be located along roadways and/or utility easement corridors. The DPR facilities would either be located at the AWP Facility or Weymouth WTP. The conveyance pump stations would require the acquisition of land by Metropolitan. Land that would be acquired for the conveyance pump stations would either be vacant or include existing uses, which would require demolition for development of the new facilities. For the proposed Pure Water uses to be compatible with surrounding land uses, it is expected that land acquired by Metropolitan for the facilities would be designated as industrial, and existing housing would not be demolished. Therefore, implementation of Pure Water would not displace substantial numbers of existing people or housing, necessitating construction of replacement housing elsewhere. Impacts would be less than significant.

6.5 PUBLIC SERVICES

Would Pure Water 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 fire protection, police protection, schools, parks, or other public facilities?

Pure Water would not require the provision of new or physically altered fire departments, police stations, schools, parks, or other public facilities. As discussed above in Section 6.4, *Population and Housing,* Pure Water would not induce substantial population growth in the area that would necessitate a need for new fire departments, police stations, schools, parks, or other public facilities. The number of temporary employees for construction and permanent employees for operations are expected to be filled by the local labor pool, which would not result in a substantial increase in demand for fire, police, school, or park services; therefore, the implementation of Pure Water would not require the construction of new or expansion of existing fire department, police station, school, or park facilities in order to maintain service ratios, response times, or other performance objectives, and would thus not result in substantial adverse impacts associated with the provision of such facilities. Pure Water's facilities and components that would have the potential to require police and fire services include the Joint Treatment Site facilities (AWP Facility, Workforce Training Center, and Warren Facility improvements), Phase 1 DPR treatment facility at Weymouth WTP, and the various pump stations. Since the Joint Treatment Site facilities would be located within and adjacent to the Warren Facility and the Phase 1 DPR treatment facility would be located within the Weymouth WTP site, it is expected that existing police and fire protection services that currently service the Warren Facility and Weymouth WTP would be able to sufficiently respond in the event of a crime, fire, or other emergency at the Joint Treatment Site facilities and Phase 1 DPR treatment facility, especially considering these sites have existing security staff and fencing. Similarly, based on their limited size and relatively minimal operational activity, the various pump stations are expected to be sufficiently serviced by existing police and fire protection services. Therefore, no impacts associated with the construction of new or expansion of existing fire protection, police protection, school, park, or other public facilities would occur.

6.6 RECREATION

Would Pure Water 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?

There are numerous parks located in the Pure Water area; however, as discussed above in Section 6.4 Pure Water would not induce substantial population growth and would therefore not increase the use of existing parks or recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. No impacts would occur.

Does Pure Water include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Pure Water does not propose the construction of recreational facilities or the expansion of existing facilities. The backbone alignment routes through linear parks located within utility easements along the San Gabriel River and is proposed to be located immediately adjacent to the San Gabriel River Trail along

the northernmost portion of the alignment. Construction of the backbone pipeline, specifically when trenching methods are used, would result in temporary partial or full removal of these facilities; however, upon completion of construction of the backbone pipeline, disturbed land would be restored to pre-existing conditions, and these recreational facilities would be replaced. As such, impacts would be less than significant.

6.7 UTILITIES AND SERVICE SYSTEMS

The need for various utilities to service and support Pure Water generally is addressed throughout the EIR. In particular, potential impacts associated with the relocation, construction, operation, and use of such utilities are discussed in Chapter 5, *Environmental Impact Analysis*, within the context of other resource environmental resource categories. No potential impacts were identified that were unique to this particular environmental resource category.

Would Pure Water require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

In and of itself, construction of Pure Water is not anticipated to significantly increase the demand for water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications services. Any increase in demand for these utilities and services associated with construction activities would be modest and could be accommodated using existing infrastructure. No new or expanded facilities would be required in any of the jurisdictions where construction activities would take place. However, construction of the AWP Facility would require relocation of an existing storm drain. In addition, construction of Pure Water's conveyance pipelines likely would require the relocation of existing utilities to provide an adequate construction corridor. These relocations would be within the impact footprint considered for Pure Water in this EIR and would not cause significant environmental effects beyond those assessed in Chapter 5.

Likewise, operation of Pure Water is not anticipated to significantly increase the demand for water, wastewater treatment, stormwater drainage, natural gas, or telecommunications services. Although operation of the AWP Facility would generate certain wastewater treatment residuals, those residuals would be returned to the Warren Facility for processing and then would be discharged to the ocean in accordance with existing permitting requirements, as described in Section 4.2.1.2. Similarly, sanitary wastewater generated by ancillary facilities at the Joint Treatment site would be routed to the Warren Facility for processing. Operation of Pure Water's treatment and conveyance facilities would require a substantial amount of energy, which in turn would require construction of new power facilities, as also described in Section 4.2.1.2. The potential impacts associated with the construction and operation of such power facilities (e.g., air quality impacts, energy use, GHG emissions, etc.) are included in the analysis in Chapter 5 within the context of other environmental resource categories. No other impacts were identified.

Would Pure Water have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Pure Water would create a new sustainable potable water supply by purifying cleaned wastewater from the Sanitation Districts' existing Warren Facility. Pure Water would improve water supply reliability to

support future forecasted growth. No adverse impact associated with water supply availability would occur as Pure Water would improve water supply reliability.

Would Pure Water 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?

Wastewater that would be generated by Pure Water operations would be minimal and would be accommodated by the Sanitation Districts' existing facilities as noted above. Pure Water would not result in a determination by the wastewater treatment provider that it does not have adequate capacity. No impact associated with wastewater generation would occur.

Would Pure Water generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

A response to this question is combined with the response to the following question.

Would Pure Water comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Pure Water would generate solid waste during construction primarily in the form of excavated soil. It is estimated that construction at the Joint Treatment Site would require the export of approximately 141,000 cubic yards of excavated soil and that construction of the backbone pipeline would require the export of approximately 1.2 million cubic yards of excavated soil. In accordance with **HAZ-EC-2** and **HAZ-EC-3** (refer to Section 5.7, *Hazards and Hazardous Materials*), hazardous and non-hazardous wastes and debris encountered or generated during construction activities would be properly handled and disposed of in accordance with federal, state, and local laws and regulations related to solid and hazardous waste, such as those set forth by the USEPA and DTSC for handling contaminated soil. As specified in **HAZ-EC-3**, contaminated soil would be profiled for disposal and would be transported to an appropriate Class I or Class II Waste Management Unit licensed to accept and treat the type of waste indicated by the profiling process. Any non-impacted soils not used onsite as backfill or diverted to other uses would be taken to a Class III Waste Management Unit or an Unclassified/Inert Waste Landfill for disposal.

The disposal of excavated soils could occur at several different locations depending on the volume, origin, and waste classification. The specific disposal facilities that would be used for Pure Water currently are unknown and typically would be identified during actual construction. However, examples of landfills in the Pure Water area that currently are operating, accept the type of non-hazardous waste that predominantly would be generated during construction of Pure Water's facilities and components, and have remaining permitted capacity include the Azusa Land Reclamation Company Landfill and the Durbin Inert Debris Engineered Fill Site. The Azusa Land Reclamation Company Landfill, located at 1211 W. Gladstone Street in the City of Azusa, has a total remaining permitted capacity of 40,655,081 cubic yards (MW 2024). The Durbin Inert Debris Engineered Fill Site, located at 13000 East Los Angeles Street in the City of Irwindale, has an annual permitted capacity of 1,248,000 tons (California Department of Resources Recycling and Recovery 2024), which is approximately equivalent to 960,000 cubic yards of excavated soil.

During operations, Pure Water facilities would not generate substantial amounts of solid waste that would exceed the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Therefore, impacts would be less than significant.

6.8 WILDFIRE

The following questions from Appendix G of the CEQA Guidelines related to wildfire pertain to areas located in or near state responsibility areas or lands classified as VHFHSZs. As discussed in Section 5.7, VHFHSZs in the Pure Water area occur in locations along the San Gabriel Mountains in the northern portion of the Pure Water area and at two locations along and near the backbone alignment. Specifically, the proposed backbone alignment is within a VHFHSZ to the west and north of the Santa Fe Dam Recreation Area and is located near a VHFHSZ in the Puente Hills (**Figure 5.7-2**).

Would Pure Water substantially impair an adopted emergency response plan or emergency evacuation plan?

The primary emergency response and evacuation plan in the Pure Water area is the Los Angeles County OAEOP, which establishes the regional coordinated emergency management system within the Los Angeles County OA. The OAEOP provides guidance and procedures for Los Angeles County to prepare for, respond to, and recover from the effects of large-scale emergencies. This includes emergency response and evacuation. Primary response and evacuation routes are determined by emergency responders who decide at the time of the emergency the routes that should be used for response and evacuation after assessing the conditions and location of the emergency to avoid endangering the lives of others, personal injury, or death. Evaluating a route for safety and viability is situational, context-specific, and subject to change. That being said, major thoroughfares in the Pure Water area that are near VHFHSZs and would likely be used for emergency response and evacuation in the instance of a wildfire event in one of the VHFHSZs in the Pure Water area (refer to **Figure 5.7-2**) include I-210, I-605, and SR 60. Construction for Pure Water would not occur within or affect roadway conditions along these major routes. Similarly, operation of Pure Water would not generate vehicular traffic that would cause congestion on these roadways. Therefore, Pure Water would not substantially impair an adopted emergency response plan or emergency evacuation plan as related to wildfire events in VHFHSZs, and impacts would be less than significant.

At a local level, construction of the Pure Water facilities and components could have the potential to affect emergency response and evacuation from the addition of construction vehicles on local roadways and from construction within local roadways, which would occur for construction of the backbone pipeline, modifications to the Azusa Pipeline, and/or construction of the Phase 2 DPR pipeline, all of which occur near VHFHSZs (refer to **Figure 5.7-2**). The addition of construction vehicles on local roadways could result in increased congestion and delays in emergency response and evacuation. Construction within roadways would require temporary lane closures, street closures, and/or intersection closures, which could potentially cause lengthier detours and/or traffic congestion that could interfere with emergency response and evacuation. **TRA-EC-1**, which involves implementation of a traffic management plan (see Section 5.11, *Transportation*), would be included as part of Pure Water to provide traffic control at the access points to construction sites and would facilitate management actions that would allow site access for emergency vehicles. The traffic management plan would identify procedures for informing and coordinating with relevant police and fire departments on construction locations and would identify potential detour routes. Some local jurisdictions operate Traffic Management Centers, and these centers would be part of coordination efforts to develop the traffic

management plan for construction of Pure Water. The traffic management plan would also consider enabling emergency vehicles to travel behind temporary concrete barriers through the work area to access incidents located in a work zone. Through implementation of **TRA-EC-1**, impacts related to local emergency response and evacuation during construction would be less than significant.

Permanent long-term operation of the Pure Water facilities and components would not result in inadequate emergency access since regular daily operations would not require traffic detours, lane closures, street closures, or intersection closures, and would not generate high levels of vehicle traffic that would cause congestion. As such, long-term operational impacts related to inadequate emergency response and evacuation would be less than significant.

Due to slope, prevailing winds, or other factors, would Pure Water exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

VHFHSZs in the San Gabriel Mountains occur near the general area identified for Pure Water components analyzed at the program level, including the Azusa Pipeline modifications (and associated pump stations) and Phase 2 DPR pipeline (and associated pump station). However, the areas designated as VHFHSZs are areas containing vegetation on sloped, undeveloped land. Based on the sloped topography, these are areas that would be unsuitable for the location of the pipelines and pump stations from a hydraulic engineering standpoint. VHFHSZs in the Puente Hills occur near the backbone alignment. The backbone alignment itself is not within a VHFHSZ, and the backbone pipeline would therefore not be constructed within a VHFHSZ. Similar to what is discussed above for the Azusa Pipeline and Phase 2 DPR pipeline pump stations, the Whitter Narrows Pump Station is not expected to occur within a VHFHSZ in the Puente Hills because the sloped topography of the areas designated as VHFHSZs render these areas as unsuitable for a pump station from a hydraulic engineering standpoint. As such, it is not anticipated that these facilities would occur within a VHFHSZ or exacerbate fire risk.

The backbone alignment is within a VHFHSZ to the west and north of the Santa Fe Dam Recreation Area. In addition, the Santa Fe Pump Station has potential to be located within a VHFHSZ in or near the Santa Fe Dam Recreation Area. Construction of the backbone pipeline and pump station would involve the use of equipment with combustion engines, which could increase fire hazards from ignition of flammable vegetation where such vegetation is present. However, equipment with combustion engines would be equipped with spark arrestors in accordance with Metropolitan's standard specifications. In addition, following initial clearing of vegetation as part of site preparation activities, potentially flammable vegetation would not be present within the immediate work areas where construction equipment would be operating. As such, construction of the backbone pipeline and Santa Fe Spreading Grounds Pump Station would not exacerbate fire risks in the VHFHSZ in the Santa Fe Dam Recreation Area. Upon completion of construction, the backbone pipeline would be located below ground and would not exacerbate wildfire risk. Facilities and infrastructure at the Santa Fe Pump Station would be located within a developed site and would also not exacerbate wildfire risk. Pure Water would therefore not exacerbate fire risks thereby exposing occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant.

Would Pure Water require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

As mentioned above, Pure Water facilities and components that have the potential to be located within a VHFHSZ include the backbone pipeline and Santa Fe Pump Station near the Santa Fe Dam Recreation Area. Construction of these facilities and components would involve the initial clearing of potentially flammable vegetation as part of site preparation activities and would therefore not exacerbate fire risk. Operationally, the backbone pipeline would be located below ground. Facilities and infrastructure at the Santa Fe Spreading Grounds Pump Station would be located within the developed site. As such, these facilities would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts would be less than significant.

Would Pure Water expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Pure Water facilities and components that would be located within or near (including downslope and downstream of) VHFHSZs include the backbone pipeline, Whitter Narrows Pump Station, Santa Fe Pump Station, modified Azusa Pipeline (and associated pump stations), and Phase 2 DPR pipeline (and associated pump station). The backbone pipeline, modified Azusa Pipeline, and Phase 2 DPR pipeline would be located below ground and would not be at significant risk of downslope or downstream flooding or landslides. Based on site planning considerations, the pump stations are not anticipated to be located at the base of steep slopes or along primary flood hazard areas that would be subject to landslides or flooding. In addition, these facilities would be constructed in accordance with applicable standard design and construction practices from established regulatory/industry sources, including the CBC, IBC, CGS, Greenbook, and Metropolitan standards. As such, impacts would be less than significant.

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7.0 CUMULATIVE IMPACT ANALYSIS

7.1 INTRODUCTION

Section 15130 of CEQA Guidelines requires EIRs to include a discussion of the potential cumulative impacts of a proposed project. Cumulative impacts are defined as two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts. The discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone (CEQA Guidelines Section 15130(b)).

As stated in the CEQA Guidelines, an EIR "shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable" (Section 15130(a)). "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects as defined in Section 15130 (Section 15065(a)(3)). The cumulative impact from several projects is the change in the environment that results from the incremental impact of the proposed development when added to other closely related past, present, and reasonably foreseeable or probable future developments. The significance of a cumulative impact may be greater than the effects resulting from the individual actions if the effects of more than one action are additive. This chapter evaluates Pure Water together with the potential effects of other closely related past, present, and reasonably foreseeable or probable future development in the Pure Water area.

Cumulative impacts may be reduced to below the level of significance through mitigation, including providing improvements and/or contributing funds through fair share fee-payment programs designed to alleviate the cumulative impact. The EIR must examine "reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project" (CEQA Guidelines Sections 15130(a)(3) and 15130(b)(5)).

7.2 CUMULATIVE IMPACT ANALYSIS METHODS

CEQA Guidelines Section 15130(b)(1) requires that a discussion of cumulative impacts be based on either: (1) a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or (2) a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

This EIR utilizes both the project list approach and summary of projections approach. Considering both types of information facilitates a more thorough and conservative analysis of potential cumulative impacts, which encompasses both impacts resulting from overall growth of the region and notable individual projects that have the potential to combine with more localized impacts from Pure Water.

7.2.1 Projections

Projections utilized for this cumulative impact analysis are from SCAG's Connect SoCal 2024, which is its 2024-2050 RTP/SCS (SCAG 2024a). Connect SoCal provides a holistic framework for planning the future

of the region, integrating growth forecasts, land use planning, mobility improvements, environmental protection, and economic opportunities. This plan is considered the most relevant planning document for the analysis because it encompasses the entire region in which Pure Water would be located (rather than individual local jurisdictions) and addresses a broad range of planning considerations rather than focusing on a specific resource, such as air quality or water quality. It includes projections for population, growth, and households at the regional, county, jurisdictional, and sub-jurisdictional levels. Because Pure Water spans numerous jurisdictions within a large portion of Los Angeles County, the cumulative impact analysis is based on projections for Los Angeles County. **Table 7-1** provides growth projections for population, households, and employment for Los Angeles County for the years 2019, 2035, and 2050. As indicated by the table, the population of Los Angeles County is forecast to grow by approximately 7.4 percent between 2019 and 2050.

Table 7-1
LOS ANGELES COUNTY FORECAST OF POPULATION, HOUSEHOLDS, AND EMPLOYMENT

Category	2019	2035	2050
Population	10,046,000	10,449,000	10,793,000
Households	3,393,000	3,933,000	4,155,000
Employment	4,562,000	5,386,000	5,461,000

Source: SCAG 2024

7.2.2 Cumulative Project List

The potential for Pure Water in combination with other projects to result in cumulative impacts depends on the location, size, and timing of the projects. Since a large portion of the Pure Water facilities would be underground pipelines that would have negligible operational impacts, the focus of this cumulative impact analysis is predominantly on potential construction-related impacts. As such, this analysis considers projects in proximity to Pure Water's proposed components and facilities that are relatively large and have the potential to be constructed concurrently. Potential operational impacts would be limited largely to activities at the Joint Treatment Site. Therefore, projects in the area surrounding that site are considered relative to the potential for cumulative operational impacts.

Pure Water would extend through a large portion of Los Angeles County, from the City of Carson in the south, to the City of Azusa in the north, and City of La Verne in the east. This cumulative impact analysis considers the potential cumulative impacts of Pure Water in combination with current and future development projects occurring within a similar geographic area. This geographic area for initial identification of potentially relevant cumulative projects generally includes land within three miles from Pure Water's project-level components (Joint Treatment Site and backbone alignment), for which specific locations are known, and throughout the cities of Azusa, Glendora, San Dimas, and La Verne, within which the program-level DPR facilities would be located. This radius was chosen to provide a conservative identification of projects that have the potential to combine in location-specific cumulative impacts, such as localized air quality impacts, land use, and transportation impacts. However, the specific assessment of the cumulative impacts for a given environmental resource category may be broader or narrower for each environmental topic, based on factors that are more relevant to that topic. For example, construction noise impacts would be limited to the immediate vicinity directly affected by construction, whereas the cumulative impact area for criteria air pollutant impacts would include the entire SCAB. Thus, the geographic scope for each environmental resource category is described below.

Guiding metrics regarding project size to be included in the analysis were 50 units or more for single-family residential projects, 200 units or more for multi-family residential projects, and 500,000 SF or more for commercial and industrial projects. Projects of this magnitude were selected to provide a conservative identification of projects that have potential to meaningfully contribute to cumulative impacts. For example, the construction of five single-family homes generally would not result in environmental impacts that would alter the overall analysis of cumulative impacts. However, if such a project was proposed adjacent to the Joint Treatment Site and/or backbone alignment, that project would be considered using reduced size metrics because it would have a greater potential to contribute to localized cumulative impacts, such as construction noise. Projects that are more distant from proposed Pure Water facilities or smaller than the guiding metrics are unlikely to result in a noticeable individual contribution to cumulative impacts and would be reflected in the cumulative impacts associated with overall regional growth, as reflected in the above-noted growth forecast.

In addition, a project's schedule is particularly relevant to the consideration of cumulative construction-related impacts because construction impacts tend to be relatively short-term. As such, projects currently under construction that are anticipated to still be under construction when Pure Water is constructed, approved projects that are anticipated to be under construction when Pure Water is constructed, and future projects currently in design or under review were included for the analysis. Construction schedules for future projects are often broadly estimated and can be subject to change. Although the timing of the future cumulative projects is likely to fluctuate due to schedule changes or other factors, this analysis conservatively assumes these projects would be implemented concurrently with Pure Water.

Development of the cumulative projects list involved outreach to jurisdictions and agencies in the Pure Water area, research on jurisdiction and agency websites, and research on the CEQANet database. **Table 7-2** lists the current and proposed projects that could potentially contribute to cumulative impacts and are therefore considered in the cumulative analysis. The projects are organized by jurisdiction (generally south to north geographically) and by agency. The locations of the cumulative projects are shown on **Figure 7-1***,* utilizing the project numbers presented in the left-hand column of **Table 7-2.**

Table 7-2
CUMULATIVE PROJECTS

Project Number	Project Name	Location	Development Description	Status
City of Carson				
1	The District at South Bay 2021	20400 East Main Street	Specific Plan (1,567,090 sf light industrial)	Under Construction
2	Imperial Avalon Specific Plan	21207 South Avalon Boulevard	Specific Plan (764 multi-family units; 10,000 sf commercial)	Under Review
City of Long Beach				
3	--	712 Baker Street	Residential (226 multi-family units)	Approved
4	--	4000 Via Oro Avenue	Warehouse/Distribution Facility (525,280 sf)	Under Review
5	--	2401 East Wardlow Road	Light Industrial/Office (740,359 sf)	Under Review

Project Number	Project Name	Location	Development Description	Status
City of Norwalk				
6	Alondra Maidstone Mixed Use Project	Alondra Boulevard and Maidstone Avenue	Mixed-Use (209 multi-family units, 3,056 sf commercial)	Approved
7	Heart of Norwalk Specific Plan	West of I-5 between Imperial Highway and Rosecrans Avenue	Specific Plan (615-acre multi-use plan)	Under Review
8	Norwalk Transit Village Specific Plan	Bloomfield Avenue between Imperial Highway and Rosecrans Avenue	Specific Plan (770 residential units, 13,500 sf commercial, 10,000 sf quasi-civic, 150-room hotel, park, open space)	Under Review
9	Norwalk Entertainment District - Civic Center Specific Plan	Southeast corner of Imperial Highway and Norwalk Boulevard	Specific Plan (350 residential units; 110,000 sf commercial)	Approved
City of Downey				
10	Prologis Stewart & Gray Road Warehouse Project	9300, 9350, 9400 Hall Road and 9301, 9333, and 9399 Stewart and Gray Road	Warehouse facility (510,110 sf warehouse/logistics use, 25,000 sf of ancillary truck workshop facility)	Approved
City of Pico Rivera				
11	Washington and Rosemead Boulevards Transit-Oriented Development Specific Plan	Washington Boulevard and Rosemead Boulevard	Specific Plan (31,589 sf mixed-use residential and 1,743,685 sf of mixed-use commercial)	Under Review
12	Beverly Boulevard Warehouse Project	Beverly Boulevard and I-605	Warehouse/Distribution Facility (357,903 sf)	Approved
City of Industry				
13	--	3951 Capitol Avenue	Industrial (120,332 sf)	Under Review
City of El Monte				
14	Esperanza Village Development	4024 Durfee Avenue	Residential (340 multi-family units)	Approved
City of Irwindale				
15	Speedway Commerce Center Specific Plan	500 Speedway Drive	Industrial/Commercial (1,378,000 sf)	Approved
16	The Park at Live Oak Specific Plan	Arrow Highway and Live Oak Avenue	Industrial/Business Park (1,451,000 sf) and Commercial (98,600 sf)	Under Construction
17	Irwindale Gateway Specific Plan	13620 Live Oak Lane	Option 1 (954,796 sf warehouse and 28,000 sf office); Option 2 (668,070 sf warehouse and 36,000 sf office and battery energy storage system)	In Design
18	Material Recovery Facility and Transfer Station	2200 Arrow Highway	Municipal Solid Waste Collection Facility	Under Construction
19	Reliance II Specific Plan	Irwindale Avenue and Foothill Boulevard	Industrial/Business Park (1,853,500 sf) and Commercial (10,000 sf)	Under Construction

Project Number	Project Name	Location	Development Description	Status
City of Duarte				
20	City of Hope Specific Plan	East Duarte Road and Cinco Robles Drive	Specific Plan (2,639,350 sf medical facilities)	Under Construction
21	Duarte Station Specific Plan	Business Center Drive and Highland Avenue	Specific Plan (636 multi-family residential units)	Under Construction
22	Duarte Town Center Specific Plan	Highland Avenue, Buena Vista Street, and Huntington Drive	Specific Plan (800 residential units, 703,000 sf of commercial, and 450 rooms of lodging)	Under Construction
23	Westminster Gardens Specific Plan Update	Central Avenue and Santo Domingo Avenue	Specific Plan (550 residential units and 112,000 sf non-residential floor area)	Under Review
City of Azusa				
24	Azusa Greens Redevelopment Project	919 North Sierra Madre Avenue	Residential (230 single-family units) and Industrial (350,320 sf)	Under Review
County of Los Angeles Department of Regional Planning				
25	22107-22133 South Vermont Avenue Apartments	22107-22133 South Vermont Avenue, Torrance, CA	Residential (525 multi-family units)	Under Construction
26	--	20100 South Alameda Street, Compton, CA	Warehouse (200,000 sf)	Approved
27	Live Oak Residential Project	4241 Live Oak Avenue, Arcadia, CA	Residential (277 multi-family units)	Under Construction
County of Los Angeles Department of Public Works/Los Angeles County Flood Control District				
28	Western Levee Bike Path	West side of Los Angeles River from Pacific Coast Highway to the south and Imperial Highway to the north	10-mile bike path along the Los Angeles River	In Design
29	Whittier Narrows Dam Safety Modification Project	Rosemead Boulevard southeast of Whittier Narrows Dam	U.S. Army Corps of Engineers project to raise Rosemead Boulevard six feet and relocate existing utilities underneath the roadway	Approved
Southern California Edison				
30	Serrano–Del Amo–Mesa Project	Along the Southern California Edison easement corridor adjacent to the San Gabriel River, generally between SR 91 in the south and SR 60 in the north	Approximately 13 miles of 500-kV transmission lines	In Design
Long Beach Utilities Department				
31	Pipeline Crossing at Los Angeles River	Along Del Amo Boulevard near its intersection with I-710	36-inch-diameter potable water pipeline	In Design

Project Number	Project Name	Location	Development Description	Status
Los Angeles County Sanitation Districts				
32	Demolition and Removal of Rectangular Digesters	At the Warren Facility, west of Figueroa Street and north of Lomita Boulevard	Demolition of five existing rectangular digestion tanks, relocating/abandoning existing yard piping, backfilling, grading, and paving	In Design
Los Angeles County Metropolitan Transportation Authority				
33	Southeast Gateway Line	Between downtown Los Angeles and the City of Artesia	14.5-mile light rail line segment with nine stations, five parking facilities, and a maintenance and storage facility	In Design
Los Angeles Department of Water and Power				
34 (not mapped [1])	Pure Water Los Angeles	Los Angeles County	Local water reuse program including the construction of advanced water purification facilities, water conveyance pipelines, and groundwater recharge and extraction facilities	In Preliminary Planning
The Metropolitan Water District of Southern California				
35 (not mapped[1])	East-West Conveyance Pipeline	Between the eastern and western sides of Metropolitan's service area	Potable water conveyance pipeline to convey water supplies from the east side to the west side of Metropolitan's service area	In Preliminary Planning
36 (not mapped[1])	Eastern Water Treatment Plants	Cities of La Verne, Claremont, and Upland	New and upgraded potable water conveyance infrastructure (pump stations and pipelines) to convey water to the existing Three Valleys Municipal Water District Miramar WTP and Water Facilities Authority Agua de Lejos WTP	Under Consideration for Future Implementation
37 (not mapped[1])	Direct Potable Reuse – Treated Water Augmentation	To Be Determined	Local connections from Pure Water's AWP Facility to the drinking water distribution system	Under Consideration for Future Implementation

kV = kilovolt; sf = square feet; WTP = water treatment plant

[1] The specific locations of project facilities are not yet defined.

7.3 CUMULATIVE IMPACT ANALYSIS

This section addresses potential cumulative impacts associated with each environmental resource category that is addressed in Chapter 5, *Environmental Impact Analysis*. The impacts of Pure Water on the remaining environmental resource categories addressed in Appendix G would be negligible, as described in Chapter 6, *Environmental Effects Found Not to be Significant*. Therefore, Pure Water would not have the potential to result in a cumulatively considerable contribution to environmental impacts related to these environmental resource categories and they are not addressed in this chapter.

7.3.1 Air Quality

The geographic scope for the cumulative analysis related to conflict with air quality plans and criteria pollutant emissions is the SCAB. The SCAB is a nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. Although the EIR for Connect SoCal 2024 determined that emissions of these pollutants in Los Angeles County would decrease over time (SCAG 2024b), impacts for the region related to these pollutants are considered cumulatively significant for the purposes of this analysis based on the current non-attainment status. Cumulative impacts related to pollutants for which the SCAB is in attainment are not considered significant. The regional and local daily emissions thresholds established by the SCAQMD have been developed for the purpose of attaining the NAAQS and CAAQS with consideration for the attainment status of the SCAB and therefore specifically address cumulative impacts to air quality (SCAQMD 1993). As evaluated in Section 5.1.5.1, Pure Water would not conflict with or obstruct implementation of the SCAQMD's AQMP. In addition, as evaluated in Section 5.1.5.2, Pure Water would not result in emissions of PM_{10}, $PM_{2.5}$, or ozone precursors NO_X and VOCs that would exceed SCAQMD thresholds after implementation of mitigation and would therefore not result in a cumulatively considerable contribution to the regional cumulative impact. While Pure Water would result in significant and unavoidable impacts related to CO during two years when substantial overlapping Pure Water construction activities are forecast to occur, the SCAB is in attainment for CO and impacts for this pollutant are not cumulatively significant.

The geographic scope for the cumulative analysis related to sensitive receptors is the area in the vicinity of the Pure Water components. As described in Section 5.1, *Air Quality*, Wilmington, West Long Beach, and Carson, have jointly been selected by CARB as a community for ongoing monitoring due to its high cumulative air pollution exposure burden, significant number of sensitive receptors, and inclusion of census tracts that have been designated as disadvantaged communities (SCAQMD 2019). Therefore, the existing baseline conditions in this community expose residents to substantial concentrations of criteria pollutants and TACs. Construction of multiple projects in addition to Pure Water could combine to generate emissions of criteria pollutants and TACs that could further affect nearby sensitive receptors. This would only occur if construction of one or more cumulative projects occurs simultaneously with and adjacent to Pure Water's construction activities, result in substantial emissions, and occur in proximity to sensitive receptors. This would not be the case for most of the cumulative projects identified in **Table 7-2** for the following reasons: (1) Pure Water and the cumulative project(s) are too far from each other, so a given sensitive receptor would not be within 1,640 feet of both projects (e.g., Project 11); (2) there are no sensitive receptors near Pure Water and/or the cumulative project(s), so a given sensitive receptor would not be within 1,640 feet of both projects (e.g., Project 15); (3) Pure Water and the cumulative project(s) would not be constructed simultaneously because of schedule (i.e., the cumulative project is already either approved or under construction, as indicated in **Table 7-2)**; and (4) Pure Water and the cumulative project(s) would not be constructed simultaneously at a given location because of constructability constraints (e.g., two projects within a given utility corridor [Project

Cumulative Projects
Joint Treatment Site
Backbone Alignment

Montrose
Verdugo Mountains Open Space Preserve
La Cañada Flintridge
Altadena
urbank
Sierra Madre
159
134
Glendale
Pasadena
Duarte
22
23
21
20
19
24
Azusa
210
Arcadia
27
16
15
17
18
110
2
San Gabriel
Alhambra
5
Rosemead
West Covina
Covin
101
10
El Monte
14
Monterey Park
Los Angeles
South El Monte
East Los Angeles
Montebello
29
13
La Puente
33
12
5
60
Maywood
11
Huntington Park
30
Whittier
Florence-Graham
South Gate
Santa Fe Springs
Downey
La Habra
10
Lynwood
105
South Whittier
605
Willowbrook
9
8
7
39
28
6
Bellflower
91
Cerritos
Fullerton
Buena Park
405
26
31
Lakewood
1
2
4
Hawaiian Gardens
Anaheim
25
Carson
3
5
Los Alamitos
32
Signal Hill
1
39
Garden Grove
Long Beach
213
47
Naval Weapons Station Seal Beach
Westminster
Sunset Beach
Fountain Valley

I:\PROJECTS\M\MetropolitanWaterDistrictCA_00501\00022.015_RRWP_Pipeline\Map\EIR\Figures.aprx MWD 5/1/2025 -RK

Source: Aerial (Esri 2021)

0 2.5 Miles

PUREWATER SOUTHERN CALIFORNIA

Cumulative Projects

Figure 7-1

30]). However, because some projects (Projects 23, 24, and 32) do not fall into one of these four categories, they would have the potential to combine with Pure Water to expose sensitive receptors to substantial pollutant concentrations. As such, the overall cumulative impact to sensitive receptors is considered potentially significant. However, as disclosed in Section 5.1.5.3, Pure Water's emissions of criteria pollutants during construction and operations would be below SCAQMD localized significance thresholds, which were established for the purpose of identifying cumulative impacts. Thus, Pure Water would not expose sensitive receptors to substantial pollutant concentrations and Pure Water's contribution to significant cumulative impacts to sensitive receptors would not be cumulatively considerable **(less than significant)**.

Cumulative projects have the potential during operations to increase vehicular congestion on roadways and potentially result in CO hotspots; however, as discussed in Section 5.1.5.3, the increase in vehicle trips associated with Pure Water would not be substantial enough to affect the flow of local intersections. Also, the potential for a CO hotspot is generally limited to the immediate vicinity of the affected roadway segment or intersection and it is unlikely that multiple concurrent cumulative projects would be constructed simultaneously in an area such that they would have a substantial impact on traffic movement at a given intersection. As such, Pure Water in combination with cumulative projects would not result in a significant cumulative impact to sensitive receptors **(less than significant)**.

The geographic scope for the cumulative analysis related to odors is the area immediately surrounding potential odor sources. Because odors rapidly disperse beyond their source, associated impacts are generally not cumulative in nature. Additionally, as discussed in Section 5.1.5.4, Pure Water would not result in substantial odor generation during construction or operation and would therefore not combine with other cumulative projects to result in a cumulatively significant impact associated with objectionable odors **(less than significant)**.

7.3.2 Biological Resources

The geographic scope for the cumulative analysis related to biological resources is Los Angeles County, most importantly land that supports native plant and animal species, native habitats, and jurisdictional aquatic resources. Los Angeles County supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Local vegetation communities provide habitat for a vast assemblage of flora and fauna, many of which are endemic to California. Development within Los Angeles County, especially in the Los Angeles Basin, has substantially altered native habitats and adversely affected native plants and wildlife. Expansion of urban development has resulted in the loss of open space and the degradation of natural areas that historically supported native habitats and sensitive species. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to biological resources, including wildlife movement corridors (SCAG 2024b). The majority of projects included in **Table 7-2** are located in areas that are already developed or the sites have previously been altered due to grading; therefore, they would not contribute significantly to direct impacts to sensitive biological resources. However, given the limited amount of remaining native habitats and associated sensitive species in the Pure Water area, Pure Water in combination with cumulative projects would have the potential to result in potentially significant cumulative impacts to special-status species, sensitive habitats, and jurisdictional aquatic resources that are present. For example, projects such as the Western Levee Bike Path, Whittier Narrows Dam Safety Modification Project, and Serrano-Del Amo-Mesa Project have the potential to directly and/or indirectly result in additional impacts to biological

resources along the San Gabriel and Los Angeles rivers, which have already been extremely restricted by past development activities and would be impacted by Pure Water.

As detailed in Section 5.2, *Biological Resources*, Pure Water would have the potential to affect special-status plant species (Nevin's barberry, Parish's gooseberry, and Sonoran maiden fern) and special-status wildlife species (coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, burrowing owl, roosting bats, and Crotch's bumblebee). Mitigation measures **BIO-MM-1** through **BIO-MM-25** would provide appropriate mitigation for potential impacts to special-status species, sensitive vegetation communities, and jurisdictional aquatic resources. These measures would provide appropriate avoidance, minimization, and/or compensation for impacts to these sensitive biological resources, including requirements to ensure no net loss of applicable resources. Therefore, the required project-specific mitigation measures would also reduce Pure Water's contribution to cumulative impacts such that the contribution would not be cumulatively considerable **(less than significant).**

7.3.3 Cultural Resources

The geographic scope for the cumulative analysis related to cultural resources is the Pure Water area. As described in Section 5.3, *Cultural Resources*, 61 cultural resources were identified within 500 feet of the Joint Treatment Site and backbone alignment, consisting of 11 archaeological sites and 50 built environment resources. In addition, portions of the Pure Water area have a moderate to high sensitivity for the presence of buried cultural resources due to their locations along the San Gabriel and Los Angeles rivers, as well as proximity to mapped historic railways and historic ranchos, and past use of these areas by the Gabrieleno people, even where no precontact resources have been recorded. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to cultural resources (SCAG 2024b). Cumulative projects would include varying degrees of demolition and/or ground-disturbing activities and therefore have the potential to impact historical resources, archaeological resources, and human remains to varying degrees. Due to the presence of known resources, the general cultural sensitivity in the area, and the extent of past disturbance to cultural resources, potential combined cultural resources impacts from Pure Water and cumulative projects within the geographic scope for the cultural resources analysis is considered cumulatively significant. Because all projects would be required to comply with California Health and Safety Code Section 7050.5 and PRC Section 5097.98, cumulative impacts related to human remains would be less than significant.

Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance and/or demolition of existing structures, have the potential to affect both currently identified historical and archaeological resources, as well as those that have not yet been identified. Because the exact locations of all Pure Water facilities and components are unknown at this stage of program design, there is potential for facilities and components to be sited within or adjacent to historical or archaeological resources, which could cause a substantial adverse change in the significance of such resources. Mitigation measures **CUL-MM-1**, **CUL-MM-2**, **CUL-MM-3**, and **CUL-MM-4** would require retention of a qualified archaeologist and architectural historian, evaluation of resources for NRHP and CRHR eligibility, cultural resources monitoring and treatment, and assessment of resources discovered during construction activities, respectively. Despite implementation of these mitigation measures, because it is currently uncertain whether all impacts to historical and archaeological resources would be feasible to avoid or reduce below a level of significance, impacts to historical and archaeological resources are conservatively considered to be significant and unavoidable Pure Water

would therefore result in a cumulatively considerable contribution to the cumulative impact to cultural resources **(significant)**.

7.3.4 Energy

The geographic scope for the cumulative analysis relative to energy is the service areas of the energy (electricity and natural gas) providers in the Pure Water area, which are SCE and SoCalGas. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to energy (SCAG 2024b). The projects identified in **Table 7-2** also would result in use of energy. This would be expected to include use of gasoline and diesel, electricity, and/or natural gas during construction and/or operation. In some cases, the cumulative projects would replace other uses that use energy less efficiently. In other cases, however, the cumulative projects would result in an increase in overall regional energy use. The projects would be required to comply with regulatory requirements for energy use (e.g., Title 24 requirements, CalGreen energy requirements, and fuel efficiency standards for vehicles). Nonetheless, there is potential that the identified projects and general growth in the region could combine to result in wasteful, inefficient, or unnecessary consumption of energy and/or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Cumulative energy impacts are considered potentially significant.

As described in Section 5.4.5.1, construction of Pure Water would consume energy in the forms of gasoline and diesel for fuel for off-road equipment, on-road haul trucks, and worker commute vehicles. Such consumption of energy (primarily diesel fuel) during construction would involve standard construction practices (e.g., equipment would be appropriately sized, engines would be turned off when not in use to limit idling time, equipment would be properly maintained), would be consistent with similar infrastructure projects, and would not represent a substantial demand on energy resources or result in the need to develop new, or alter existing, energy production or distribution facilities. Electricity would be used during operations primarily for powering treatment equipment and systems and pumping water through the backbone pipeline to various receiving locations. Water treatment and conveyance are inherently energy-intensive processes due to the physical challenges of transporting large volumes of water across long distances and elevation changes. As detailed in Section 5.4.5.1, the overall energy demand for Pure Water, including conveyance, remains comparable to or lower than other major water supply sources such as desalination and SWP imports. Pure Water has been coordinated with SCE to ensure adequate energy supply and transmission capacity. Pure Water would also integrate renewable energy sources as part of its sustainability measures. Specifically, **GHG-EC-2** requires Metropolitan to install photovoltaic solar panels with a total power rating of at least 1.5 megawatts at the Joint Treatment Site, reducing reliance on external power sources. As such, Pure Water would not result in the wasteful, inefficient, or unnecessary use of energy for operations. Instead, it would contribute to a reliable and sustainable local water supply, reducing dependence on imported water sources that require comparable or even greater energy inputs for long-distance pumping and treatment. It also would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, including Metropolitan's CAP. As a result, Pure Water would not result in a cumulatively considerable contribution to the cumulative energy impact (**less than significant**).

7.3.5 Geology and Soils

Impacts relative to seismic hazards and other geologic/soil conditions (e.g., fault rupture, ground shaking, liquefaction, landslides, subsidence, collapsible soils, and expansive soils) are generally site-specific and not cumulative in nature. The presence of one project in a seismic or geologic potential

hazard area would not have an effect on potential hazards to a project in another location. The amount of damage caused by each of these events would be site-specific due to various factors such as the type of base rock, the soils each of the sites are located on, and the type of structure(s) each project might construct. As a result, the amount of damage caused by a seismic or geologic event will vary between projects. As discussed in Section 5.5.5.1, Section 5.5.5.3, and Section 5.5.5.4, Pure Water would not result in significant impacts related to seismic hazards, geologic instability, or expansive soils with implementation of environmental commitment **GEO-EC-1**. Therefore, Pure Water, in combination with other cumulative projects, would not result in a cumulatively significant impact related to exposure to seismic and geologic hazards.

The geographic scope for the cumulative analysis related to soil erosion is the watersheds downstream from Pure Water's construction sites. This is because rainfall erosion of soils exposed by ground disturbance activities during construction can lead to downstream sedimentation impacts, as sediment-laden runoff is carried along drainage facilities and natural water courses by stormwater flows. Some of the cumulative projects in **Table 7-2** would involve ground disturbance activities, including vegetation clearing, grading, excavation, and trenching that could contribute, however incrementally, to the overall sedimentation issues in runoff flows that discharge into downstream watercourses. For example, a number of the cumulative projects, such as the Whittier Narrows Dam Safety Modification Project and Serrano-Del Amo-Mesa Project, are planned in proximity to the San Gabriel River (**Figure 7-1**) and therefore would have the potential to result in impacts to that waterway. However, projects, including Pure Water, would be required to meet water quality standards and comply with water quality measures contained in federal, state, and regional requirements. This would entail obtaining an NPDES CGP and implementing a SWPPP during construction and implementing appropriate BMPs, including site restoration as applicable, at the completion of construction activities. These requirements are designed to avoid or minimize erosion and sedimentation from each project to the extent that they do not result in increased sedimentation of waterways. Therefore, impacts to the local watersheds caused by downstream sedimentation impacts from soil erosion associated with ground disturbance activities would not be cumulatively significant.

The geographic scope for the cumulative analysis of paleontological resources is the paleontologically sensitive geologic formations within the Pure Water area. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to paleontological resources (SCAG 2024b). Cumulative projects would include varying degrees of ground-disturbing activities, and, therefore, have the potential to impact paleontological resources to varying degrees. Due to the presence of geologic formations with high paleontological potential in the Pure Water area and the extent of past disturbance to those resources, potential impacts to paleontological resources from the cumulative projects are considered cumulatively significant. As discussed in Section 5.5.5.6, Pure Water has the potential to affect unknown paleontological resources during ground-disturbing activities in areas exceeding depths of artificial fill, previously disturbed sediments, and younger sediments with low potential for paleontological resources; however, mitigation measures **PAL-MM-1** and **PAL-MM-2** include implementation of a paleontological monitoring plan and management plan. These measures would ensure that scientific information available from the fossils is appropriately collected and made available for research. As a result, Pure Water's contribution to the cumulative impact to paleontological resources would not be cumulatively considerable (**less than significant**).

7.3.6 Greenhouse Gas Emissions

The geographic scope of cumulative impacts related to GHG emissions and climate change is global because impacts of climate change are experienced on a global scale regardless of the location of GHG emission sources. Therefore, GHG emissions and climate change are, by definition, cumulative impacts. As discussed in Section 5.6.1, the adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions are significant. Thus, the issue of GHG emissions and climate change involves an analysis of whether a project's contribution towards an impact is cumulatively considerable.

The determination of whether a project would result in a cumulatively considerable impact related to GHG emissions and climate change is based on the project's compliance with state targets established by SB 32 and EO B-55-18 to reduce GHG emissions to 40 percent below 1990 levels by 2030 and to net zero by 2045, respectively. As discussed in Section 5.6, *Greenhouse Gas Emissions*, Pure Water would be consistent with Metropolitan's CAP and by being consistent with the CAP, the proposed Project would also be consistent with state GHG emission reduction targets established by SB 32 and EO B-55-18 because these state-level targets are incorporated into the CAP's GHG emissions reduction target. The CAP was adopted and prepared in compliance with the requirements of CEQA Guidelines Section 15183.5. As a result, Pure Water's contribution to cumulative GHG emissions impacts would not be cumulatively considerable **(less than significant).**

7.3.7 Hazards and Hazardous Materials

Impacts relative to the use of hazardous materials and hazardous materials sites are generally site specific and limited to the area(s) where hazardous materials are being used or where a listed hazardous materials site is located. The use or accidental release of hazardous materials by one project, or the presence of one project on or near a hazardous materials site, would generally not have the potential to result in combined impacts with another site. In addition, cumulative development would be required to comply with applicable federal, state, and local regulations related to the transportation, storage, use, and disposal of hazardous materials. For example, facilities that handle certain quantities of hazardous materials in their operations would be required to implement an HMBP to allow for the safe transportation, storage, use, and disposal of hazardous materials. As such, cumulative impacts related to hazardous materials would be less than significant. Pure Water would include implementation of several environmental commitments that would help to ensure that it would not result in significant cumulative impacts. These environmental commitments include preparation of an HMBP and SPCC Plan (**HAZ-EC-1**), SSSP (**HAZ-EC-2**), Hazardous Materials Management Plan (**HAZ-EC-3)**, Utility Location Survey (**HAZ-EC-4**), and Demolition Evaluations (**HAZ-EC-5**). Therefore, the construction and operation of Pure Water facilities, in combination with cumulative development, would not result in a significant cumulative impact related to hazardous materials (**less than significant**).

Similarly, impacts related to aircraft hazards are generally site specific and limited to the area within the AIA or two miles of a specific airport. Location of one project within an AIA would not increase potential aircraft hazards at another site. The Joint Treatment Site is not located within an airport land use plan or within two miles of an airport (the nearest airport is Long Beach Airport, located approximately 6.4 miles to the east). The backbone alignment is located approximately 1.3 miles from the Long Beach Airport and approximately 1.9 miles from the San Gabriel Valley Airport, but is not within the AIA of either airport, as identified in the applicable airport land use plans. The backbone pipeline would be located

below ground and would not introduce new above-ground land use developments (houses, commercial business, etc.), result in potential hazards to aircraft operations, or involve an increase to aircraft usage. Therefore, the construction and operation of Pure Water facilities, in combination with cumulative development, would not result in a significant cumulative impact related to airport hazards (**less than significant**).

The geographic scope for the cumulative analysis related to emergency response and evacuation is the circulation network (i.e., roadways and freeways) within the Pure Water area. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to emergency response and evacuation (SCAG 2024b). Cumulative development within the Pure Water area would have the potential to affect emergency response and evacuation through (1) construction work within roadways and subsequent lane closures; and (2) increased traffic volumes causing roadway congestion. Due to potential construction or congestion in the roadways combined with Pure Water's anticipated work within roadways and associated lane closures, cumulative impacts related to emergency response and evacuation are considered potentially significant. However, construction and operation of Pure Water would not substantially increase traffic volumes within the geographic scope during either construction or operation, as detailed in Section 5.11, *Transportation*. While construction of Pure Water would result in an increase in vehicles, primarily haul trucks, the increase would be temporary. Following construction, operation of Pure Water would generate minimal traffic compared with ADT volumes for adjacent roadways, and the impacts on the surrounding circulation system would be negligible. While Pure Water would involve construction within the roadway ROW which would require partial or full lane closures, Pure Water would implement environmental commitment **TRA-EC-1** that requires the preparation and implementation of a TCP/TMP. The TCP/TMP would include measures to allow for continued roadway operations and traffic circulation. Following construction, affected roadways would be restored to pre-existing conditions and no long-term impacts would occur. As such, with implementation of environmental commitment **TRA-EC-1**, Pure Water's contribution to cumulative emergency response and evacuation impacts would not be cumulatively considerable (**less than significant**).

The geographic scope for the cumulative analysis related to wildland fires is the Pure Water area and surrounding VHFHSZs, including the San Gabriel Mountains to the north of the Pure Water area. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to wildland fire (SCAG 2024b). Although the majority of the cumulative projects listed on **Table 7-2** would be located in urbanized areas outside of VHFHSZs, cumulative projects in the vicinity of Puente Hills as well as the area near and to the north of the Santa Fe Dam Recreation Area would be located within or in proximity to VHFHSZs. Potential cumulative impacts related to wildland fires would be potentially significant because activities in these areas have the potential to expose people or structures to the risk of wildland fires. With regard to Pure Water facilities, the backbone alignment would be partially within a VHFHSZ and the Santa Fe Pump Station and/or associated electrical substation and transmission lines could potentially be located within a VHFHSZ. Potentially flammable vegetation would be removed as part of site preparation activities, the backbone pipeline would be below ground, and above-ground facilities would comply with the applicable requirements of the California Fire Code. Therefore, Pure Water's contribution to cumulative wildland fire hazards would not be cumulatively considerable (**less than significant**).

7.3.8 Hydrology and Water Quality

The geographic scope for the cumulative analysis related to surface water quality encompasses the Dominquez Watershed, Los Angeles River Watershed, and San Gabriel River Watershed. As shown in **Table 5.8-1** in Section 5.8, *Hydrology and Water Quality*, numerous water bodies within these watersheds have been included on the CWA Section 303(d) list of impaired waters. A significant cumulative impact to the watersheds has thus already occurred as a result of past development. Numerous, broad regulatory requirements, including the CGP, IGP, and WDRs, have been adopted with the intent to avoid or minimize water quality impacts from each project to the extent that they do not result in increased cumulative water quality impacts. The cumulative projects would be subject to these requirements, as applicable. As none of the identified cumulative projects would involve ocean discharge, no cumulative impacts related to ocean water quality would occur. In accordance with environmental commitment **HYD-EC-1**, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion and sedimentation during construction. Impacts to surface water quality associated with facilities that would use potential pollutants during operations would be avoided through implementation of a HMBP and SPCC Plan (per environmental commitment **HAZ-EC-1**) and compliance with the IGP if required (per environmental commitment **HYD-EC-2**). Through adherence to these regulatory requirements adopted for the purpose of addressing cumulative water quality impacts, Pure Water would not violate water quality standards or waste discharge requirements, and its contribution to the cumulative surface water quality impact would not be cumulatively considerable (**less than significant**).

The geographic scope for the cumulative analysis related to groundwater quality encompasses the West Coast Basin, Central Basin, and Main San Gabriel Basin. As described in Section 5.8, these basins have been impacted to varying degrees by excessive withdrawals and pollution. Adjudication of the basins limits the amount of groundwater that can be withdrawn, and measures have been implemented to address pollution concerns; nonetheless, groundwater impacts are considered cumulatively significant. Pure Water would help to increase groundwater levels by providing purified water for groundwater replenishment via injection wells and spreading basins. As part of the required Title 22 recycled water permit, extensive requirements would be put in place to ensure that Pure Water would not result in adverse impacts related to interference with groundwater recharge by others or result in cumulative exceedance of groundwater basin plan objectives. Thus, Pure Water's contribution to the cumulative groundwater impact would not be cumulatively considerable (**less than significant**).

The geographic scope for the cumulative analysis related to drainage patterns includes receiving waters within the Dominguez Watershed, Los Angeles River Watershed, and San Gabriel River Watershed. Cumulative projects would have the potential to disrupt existing drainage patterns in a manner that would result in erosion, sedimentation, flooding, increased runoff rates, and increased amounts of polluted runoff. Cumulative impacts are therefore considered significant. Construction of the Pure Water facilities and components would result in ground disturbance, which could alter surface water runoff patterns and result in erosion and siltation; however, Pure Water would obtain permit coverage under the CGP and implement SWPPPs and associated control measures to minimize erosion and sedimentation in accordance with environmental commitment **HYD-EC-1**. Upon completion of construction of below-ground facilities and components, disturbed areas would be restored to pre-existing conditions. These facilities and components would therefore not result in substantial permanent alteration to drainage patterns in a manner that would result in erosion, sedimentation, flooding, increased runoff rates, and increased amounts of polluted runoff. Permanent above-ground facilities and components would result in a permanent alteration to site drainage patterns through the

introduction of impervious surfaces; however, through compliance with applicable permits and implementation of BMPs, stormwater generated at these sites would be handled in accordance with regulatory standards such that the facilities would not result in erosion, sedimentation, flooding, increased runoff rates, and increased amounts of polluted runoff. Pure Water would therefore not result in a cumulatively considerable contribution to cumulative impacts on drainage patterns (**less than significant**).

Impacts relative to flood hazards and inundation areas are generally specific to a project site. Location of one project in a hazard area would not affect whether another project would be located in a hazard area. Pure Water, in combination with other cumulative projects, would not result in a cumulatively significant impact related to flood hazard or dam inundation areas (**less than significant**).

7.3.9 Land Use and Planning

The geographic scope for the cumulative analysis related to land use and planning includes development adjacent to the Pure Water facilities. Cumulative projects would be individually evaluated to avoid inconsistency with the purpose and intent of applicable planning goals, implementation policies, and zoning requirements for the applicable local jurisdiction, to the extent feasible. Private development projects would also be required to identify and mitigate inconsistencies among the various land use plans. In addition, each development project would be subject to design review by the local jurisdiction, which would ensure compatibility of future projects within their respective land use designations. The planning and design review processes administered by the cities, or the County, for these cumulative projects would promote design compatibility among existing and new development. Pure Water is a water utility project that is not subject to discretionary design review by local land use agencies, although Metropolitan is working voluntarily and cooperatively with local jurisdictions to avoid and reduce any potential land use inconsistencies. Once constructed, the majority of Pure Water facilities would be located below ground and therefore would not create a land use inconsistency. The above-ground facilities would be designed to avoid conflicts with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Thus, Pure Water, in combination with other cumulative projects, would not result in a cumulatively significant impact related to land use plans (**less than significant**).

Impacts related to a physical division of a community are generally site-specific and would not result in cumulative impacts. Furthermore, Pure Water would not physically divide a community (**no impact**).

7.3.10 Noise

The geographic scope for the cumulative analysis related to noise is NSLUs within the immediate vicinity (i.e., 1,000 feet) of proposed Pure Water facilities and components. Generally, noise impacts are limited to the area surrounding the source, as noise attenuates with distance, especially when there are intervening structures in an urban environment, and only has the potential to combine with other noise sources occurring simultaneously in the immediate vicinity. This would only happen if construction of one or more cumulative projects would emit substantial noise, occur adjacent to and simultaneously with Pure Water's construction activities, and occur in proximity to NSLUs. For reasons similar to those presented above in Section 7.3.1, such situations are unlikely to occur for most of the cumulative projects in **Table 7-2**. However, this scenario could occur for some projects (e.g., Project 24), and the impact with respect to exposure of NSLUs to substantial noise during construction is considered cumulatively significant. As disclosed in Section 5.10, *Noise*, direct impacts associated with construction

of Pure Water would be potentially significant after mitigation. Therefore, Pure Water would result in a cumulatively considerable contribution to the significant cumulative impact related to construction noise (**significant**).

During operations, a large portion of Pure Water's facilities and components would be located below ground (e.g., pipelines) and would not generate noise. With regard to Pure Water's above-ground facilities that would generate noise, it is unlikely that cumulative projects would operate simultaneously with these facilities and components in a manner that would result in a cumulatively significant impact during operations. In addition, Pure Water includes mitigation requiring operational facilities and components to comply with applicable jurisdictional noise standards, which would avoid a cumulatively considerable contribution to cumulative operational noise impacts (**less than significant**).

Vibration impacts are limited to the area directly surrounding the source, as vibration attenuates rapidly with distance; therefore, vibration impacts are not cumulatively significant (**less than significant**).

7.3.11 Transportation

The geographic scope for the cumulative analysis related to the circulation system, VMT, traffic hazards, and emergency access is the circulation network adjacent to the Pure Water facilities and components. This includes highways and other roadways, bike paths/lanes, and pedestrian facilities (i.e., sidewalks). Cumulative projects listed in **Table 7-2** would have the potential to generate vehicular traffic on the regional and local roadway systems within the geographic scope. The amount of traffic generated depends on the type and size of the project. Larger projects requiring substantial grading and excavation could contribute large numbers of haul truck trips during construction. Residential, commercial, and mixed-use projects would consistently contribute large numbers of additional vehicles to regional and local roadways during operations. Given the different types and sizes of the projects included in the cumulative scenario, it is reasonable to assume that the cumulative projects could combine to generate vehicular traffic that could affect regional and local roadways. In addition, infrastructure projects could involve the installation and/or maintenance of facilities within public ROW, which would require partial or full lane closures. In combination, cumulative projects generating increased traffic and/or resulting in lane closures could result in cumulatively considerable impacts to the local and regional roadway systems as related to traffic circulation, VMT, traffic hazards, and emergency access. As such, the combined impacts from the construction and/or operation of projects within the geographic scope related to transportation would be potentially cumulatively significant.

When added to the cumulative scenario described above, construction and operation of Pure Water would not substantially increase traffic volumes within the geographic scope. While Pure Water would involve construction within the roadway ROW which would require partial or full lane closures, Pure Water would implement environmental commitment **TRA-EC-1** that requires the preparation and implementation of a TCP/TMP. The TCP/TMP would include measures to allow for continued roadway operations and traffic circulation. The TCP/TMP would also minimize traffic-related hazards and ensure adequate emergency access during construction. Preparation and implementation of the TCP/TMP would be coordinated with local agencies with jurisdiction over affected roadways, as well as coordination with local police and fire departments. This coordination would help to ensure that Pure Water activities are considered in conjunction with other activities that are being implemented at the same time. Following construction, affected roadways would be restored to pre-existing conditions and no long-term impacts would occur. In addition, operation of Pure Water would generate minimal traffic compared with ADT volumes for adjacent roadways, and the impacts on the surrounding circulation

system would be negligible. As such, with implementation of environmental commitment **TRA-EC-1**, Pure Water's contribution to cumulative transportation-related impacts would not be cumulatively considerable (**less than significant**).

7.3.12 Tribal Cultural Resources

The geographic scope for the cumulative analysis related to TCRs is the Pure Water area, which is located within the traditional territories of numerous Native American Tribal groups. The EIR for Connect SoCal 2024 determined that it would add to significant adverse cumulative environmental impacts with respect to TCRs (SCAG 2024b). As described in Section 5.12, *Tribal Cultural Resources,* Metropolitan received formal notification for consultation from the following four California Native American tribes that are traditionally and culturally affiliated with the geographic area of Pure Water: Gabrieleño Band of Mission Indians-Kizh Nation; San Gabriel Band of Mission Indians; Soboba Band of Luiseño Indians; and Yuhaaviatam of San Manuel Nation. During consultation, sites considered to be TCRs were identified in the Pure Water area. Due to the presence of known TCRs, the general cultural sensitivity in the area, and the extent of past disturbance to TCRs, potential combined TCR impacts from Pure Water and cumulative projects within the geographic scope for the TCR analysis is considered cumulatively significant.

Construction activities for the Pure Water facilities and components, specifically activities that involve ground disturbance, have the potential to affect both currently identified TCRs, as well as those that have not yet been identified. Because the exact location of all Pure Water facilities and components is unknown at this stage of program design, there is potential for facilities and components to be sited within or adjacent to TCRs, which could cause a substantial adverse change in the significance of such resources. Mitigation measures **TCR-MM-1**, **TCR-MM-2**, and **TCR-MM-3** would require minimization of impacts to TCRs through avoidance, Tribal monitoring, and assessment of discovered resources, respectively. Despite implementation of these mitigation measures, because it is currently uncertain whether all impacts to TCRs would be feasible to avoid, impacts to TCRs are considered to be potentially significant and unavoidable. Pure Water would therefore result in a cumulatively considerable contribution to the regional impact (**significant**).

7.4 REFERENCES

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8.0 OTHER CEQA CONSIDERATIONS

This chapter includes a discussion of other CEQA considerations related to the following: the potential for growth inducement; issue areas where impacts would be significant and unavoidable; and significant, irreversible environmental effects related to implementation of Pure Water.

8.1 GROWTH INDUCEMENT

8.1.1 Introduction

Section 15126.2(e) of the CEQA Guidelines mandates that the growth-inducing impact of a project be discussed. This discussion must address: (1) the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly in the surrounding environment; and (2) the potential for a project to encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. This second prong encompasses the potential for a project to induce growth by the expansion or extension of existing services, utilities, or infrastructure.

A project can have direct and/or indirect growth inducement potential. An example of a project that is directly growth-inducing is one that involves construction of new housing. An example of a project that is indirectly growth-inducing is one that requires a substantial permanent or temporary new employment demand that then stimulates the need for additional housing and services. A project also would be considered indirectly growth-inducing if it removes an obstacle to additional growth and development, such as an existing constraint on a required public service. Typically, the growth-inducing potential of a proposed project is considered significant if it stimulates population growth or a population concentration above what is assumed in local and regional land use plans or in projections made by regional planning authorities, such as SCAG.

For Pure Water, the key issue is whether or to what extent the water supplies it would provide would have indirect growth-inducing impacts within Metropolitan's service area. More specifically, would Pure Water merely improve the reliability of existing water supplies to serve planned growth or would the program also provide supplies that might contribute to unplanned growth? In this regard, California courts have recognized that there is a different potential for indirect growth inducement when the "sole reason to construct" a proposed infrastructure improvement project "is to provide a catalyst for further development in the immediate area" (*City of Antioch v. City Council of the City of Pittsburg* [1986]) as compared to a project that is "designed to accommodate a development whose growth-inducing impact had already been addressed" (*Merz v. Monterey County Board of Supervisors*; California Court of Appeal 1983).

8.1.2 Metropolitan's Water Supply and Demand

Metropolitan developed the 2020 UWMP (Metropolitan 2021) and the 2020 IRP – Regional Needs Assessment (Metropolitan 2022), which serve as the long-term regional planning documents related to water supply and demand. Together, the UWMP and IRP serve as the water supply reliability roadmap for the Southern California region.

8.1.2.1 2020 Urban Water Management Plan

The Urban Water Management Planning Act requires suppliers to conduct a water service reliability assessment that compares the total water supply sources available to the water supplier with the long-term projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The 2020 UWMP presents Metropolitan's water reliability assessment from 2025 through 2045.

The 2020 UWMP specifically considers demographic factors and the associated retail demand within Metropolitan's service area. Total retail demand includes municipal and industrial demand, agricultural demand, seawater barrier demand, and storage replenishment demand. The municipal and industrial demand is the retail demand category most dependent on demographic and economic factors, encompassing future population growth.

The demographic and economic data used in developing the projections in the 2020 UWMP were provided in SCAG's 2020-2045 RTP/SCS (which covers Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties; SCAG 2020) and the San Diego Association of Governments' (SANDAG's) San Diego Forward: The 2019 Federal Regional Transportation Plan (SANDAG 2019). The SCAG and SANDAG regional growth forecasts are the core assumptions that drive the demographic and associated municipal and industrial retail demand factors in Metropolitan's 2020 UWMP. SCAG's and SANDAG's projections undergo extensive local review, incorporate zoning information from city and county general plans, and are evaluated in EIRs. Both SCAG and SANDAG prepare demographic forecasts based on land use data for their respective regions through extensive processes that emphasize input from local planners and are done in coordination with local or regional land use authorities, incorporating essential information to reflect anticipated future populations and land uses. These growth forecasts are used to guide development of regional plans and strategies mandated by federal and state governments. Metropolitan's use of SCAG and SANDAG projections is consistent with CWC Section 10631's requirement for suppliers to include current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning.

Population estimates and total projected retail municipal and industrial demand in Metropolitan's service area from 2020 to 2045 are provided in **Table 8-1**.

Table 8-1
POPULATION AND RETAIL MUNICIPAL AND INDUSTRIAL DEMAND IN METROPOLITAN'S SERVICE AREA

	2020	2025	2030	2035	2040	2045
Population						
Los Angeles County	9,275,000	9,692,000	9,894,000	10,118,000	10,332,000	10,538,000
Orange County	3,184,000	3,353,000	3,433,000	3,491,000	3,524,000	3,527,000
Riverside County	1,813,000	1,987,000	2,105,000	2,191,000	2,271,000	2,344,000
San Bernardino County	872,000	946,000	987,000	1,031,000	1,075,000	1,119,000
San Diego County	3,261,000	3,442,000	3,536,000	3,624,000	3,709,000	3,789,000
Ventura County	630,000	669,000	679,000	690,000	699,000	709,000
TOTAL	**19,035,000**	**20,089,000**	**20,634,000**	**21,145,000**	**21,610,000**	**22,026,000**
Retail Municipal and Industrial Demand (AF)						
Los Angeles County	1,346,000	1,389,000	1,403,000	1,426,000	1,440,000	1,455,000
Orange County	537,000	540,000	543,000	545,000	546,000	545,000
Riverside County	416,000	450,000	475,000	493,000	508,000	524,000
San Bernardino County	201,000	209,000	215,000	222,000	229,000	236,000
San Diego County	521,000	531,000	545,000	559,000	570,000	581,000
Ventura County	122,000	123,000	123,000	124,000	124,000	125,000
TOTAL	**3,143,000**	**3,242,000**	**3,304,000**	**3,369,000**	**3,417,000**	**3,466,000**

Source: 2020 UWMP (Metropolitan 2021)
AF = acre-feet

As shown in **Table 8-1**, the population in Metropolitan's service area was approximately 19.0 million in 2020. SCAG and SANDAG estimate the population in Metropolitan's service area will reach 20.1 million in 2025 and 22.0 million in 2045. This population growth is estimated to result in a total retail municipal and industrial demand of 3.2 million acre-feet in 2025 and 3.5 million acre-feet in 2045, up from 3.1 million acre-feet in 2020.

8.1.2.2 2020 Integrated Water Resources Plan

Metropolitan is a regional water wholesaler that serves 26 member agencies. Some of these agencies purchase almost all their water supplies from Metropolitan. Other agencies purchase water only as needed to supplement their existing supplies from other sources. These member agency purchases constitute demands on Metropolitan. As discussed in Chapter 3.0, *Project Needs, Benefits, and Objectives,* Metropolitan's 2020 IRP serves as its long-term, comprehensive water resources strategy for meeting these demands and ensuring that the Southern California region continues to have a reliable and affordable water supply.

As discussed in Chapter 3, the 2020 IRP includes a Regional Needs Assessment that takes an expanded approach to forecasting future possibilities beyond the single scenario outcomes included in the 2020 UWMP. Specifically, it employs a scenario planning process to explore the water supply reliability outcomes through 2045 under four different planning scenarios, each of which quantifies the impacts of projected outcomes for water supply reliability.[1] Among other things, development of these planning scenarios considered demographic and economic change, water use efficiency, climate change, regulatory environment, and local supply development (Metropolitan 2022).

[1] The factors and assumptions used to create the 2020 UWMP scenario fall within the bounds of the IRP scenario planning.

The Regional Needs Assessment (RNA) utilized a retail demand model to forecast future retail municipal and industrial demand for each planning scenario using projected demographic growth and conservation savings. Metropolitan constructed demographic growth projections for Southern California with assistance from the Center for Continuing Study of the California Economy. The Center for Continuing Study of the California Economy's projections were based on studies published by the U.S. Census Bureau. After accounting for retail demand forecasts, including municipal and industrial, agriculture, seawater barrier, and storage replenishment demand, in combination with local supply projections, the RNA calculated future demand on Metropolitan water supplies (Metropolitan 2022).

The RNA indicates that by 2045 Metropolitan would need up to 650,000 AF of additional annual core supply to meet projected demands. In addition, the RNA indicates that Metropolitan would need to develop another 100,000 to 600,000 AFY to meet required local supply forecasts for 2045 (Metropolitan 2022).

8.1.3 Growth Inducement Potential

Implementation of Pure Water would not directly induce population growth because it does not propose new homes or businesses that would directly attract new residents to the area. Although construction of Pure Water would create temporary employment opportunities, these jobs would be expected to be filled by the local labor pool/workforce. Operation of Pure Water also would require permanent staffing, primarily for the AWP Facility. It is anticipated that the fully built-out AWP Facility (i.e., with direct potable reuse treatment) would involve approximately 194 permanent positions. Again, these positions are expected to be filled by the local labor pool/workforce.

As mentioned above, a project could indirectly induce growth if it stimulates population growth or a population concentration above what is assumed in local and regional land use plans or in projections made by regional planning authorities through the removal of a constraint on a public service. Local jurisdictions within Metropolitan's service area govern land use and development within their respective jurisdictions. These jurisdictions have adopted general plan documents that guide the type, location, and level of land use and development and have assessed the growth-related impacts associated with planned land use and growth in EIRs. In addition, SCAG and SANDAG have developed the 2024-2050 RTP/SCS (SCAG 2024) and the 2021 Regional Transportation Plan (SANDAG 2021), respectively, which serve as long-term planning and management plans and include measures, such as improvements to the regional transportation system, to offset potential impacts associated with projected growth.

Metropolitan does not have the authority to make land use decisions to halt or alter growth and development plans or approvals, nor does it have the authority to address potential significant effects of planned growth. Authority to implement such measures lies within the individual jurisdictions within Metropolitan's service area. Metropolitan does, however, have the authority to take actions and implement projects to help mitigate the secondary effects of growth on water resources and water supply services within its service area.

Pure Water would add about 155,000 AFY to Metropolitan's core supply. This supply would be used to help meet future demands within Metropolitan's service area, as projected in the 2020 UWMP and 2020 IRP RNA. These demand projections, in turn, were based on the population growth projections provided by SCAG, SANDAG, and the U.S. Census Bureau. Thus, Pure Water would assist Metropolitan in providing a sustainable water supply to support planned growth, decreasing the likelihood of future net shortages and contributing to regional reliability goals.

In addition, Pure Water would help to reduce the region's current dependence on imported water supplies and assist in addressing potential decreases in or disruptions to these supplies due to factors such as climate change, regulatory conditions, and seismic events. Pure Water also would improve the resiliency and flexibility of Metropolitan's existing water supply infrastructure to address anticipated future needs in Southern California. As such, Pure Water would not indirectly induce population growth by removing an impediment or obstacle to additional, unplanned growth.

Therefore, Pure Water's growth-inducing impacts would be less than significant.

8.2 UNAVOIDABLE ADVERSE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires the identification of significant environmental impacts that cannot be avoided, even with the implementation of feasible mitigation/performance measures. The final determination of significance of impacts and of the feasibility of mitigation measures will be made by the Metropolitan Board of Directors as part of their certification of this EIR.

Sections 5.1 through 5.12 of this EIR provide an evaluation of the potentially significant environmental impacts associated with implementation of Pure Water and corresponding mitigation measures to avoid or substantially reduce such impacts. According to this evaluation, Pure Water would result in potentially significant environmental impacts related to regional CO emissions; special-status plant and animal species, sensitive natural communities, jurisdictional waters and wetlands, and local policies and ordinances related to biological resources; historical and archaeological resources; noise and vibration; paleontological resources; and tribal cultural resources.

The mitigation measures identified in Chapter 5 would reduce potentially significant impacts associated with special-status plant and animal species, sensitive natural communities, jurisdictional waters and wetlands, and local biological policies and ordinances; operational noise and vibration; and paleontological resources to less-than-significant levels.

Although mitigation measures have been proposed to reduce impacts associated with CO emissions, construction noise, historical and archaeological resources, and tribal cultural resources, the residual impacts are conservatively assessed as still being significant. First, no additional feasible mitigation measures are available to further reduce CO emissions associated with Pure Water's construction activities. Second, it cannot be stated with certainty that the proposed mitigation measures for noise would reduce potential impacts to NSLUs to less-than-significant levels during the construction of Pure Water's pipelines and pump stations. Third, not all locations for Pure Water's various facilities and components are currently known. As a result, it cannot be determined at this time whether it will be feasible to reduce all potential impacts to historical, archaeological, and tribal cultural resources to less-than-significant levels. Therefore, these impacts are considered significant and unavoidable.

8.3 IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(d) of the CEQA Guidelines requires a discussion of significant irreversible environmental changes that would be caused by a proposed project. Specifically, "Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from

environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified." Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve a large commitment of nonrenewable resources;
- The project involves uses in which irreversible damage would result from any potential environmental accidents associated with the project; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Pure Water would construct permanent facilities that would continue to provide potable water for future generations; however, the provision of potable water is not considered a detrimental environmental change. Rather, the new high-quality water source that would be provided by Pure Water would reduce reliance on imported water supplies, provide greater resilience of local water supplies, and help meet regional water demands.

Construction and operation of Pure Water would require a large commitment of energy resources, with a portion of these resources being nonrenewable in the forms of electricity and fossil fuels. Consumption of energy during construction would involve standard construction practices (e.g., equipment would be appropriately sized, engines would be turned off when not in use to limit idling time, equipment would be properly maintained), would be consistent with similar infrastructure projects, and would not represent a substantial demand on energy resources or result in the need to develop new, or alter existing, energy production or distribution facilities. Electricity would be used during operations primarily for powering treatment equipment and systems and pumping water through the backbone pipeline to various receiving locations. Water treatment and conveyance are inherently energy-intensive processes due to the physical challenges of transporting large volumes of water across long distances and elevation changes. As detailed in Section 5.4.5.1, the overall energy demand for Pure Water, including conveyance, remains comparable to or lower than other major water supply sources such as desalination and SWP imports. Pure Water has been coordinated with SCE to ensure adequate energy supply and transmission capacity. Pure Water would also integrate renewable energy sources as part of its sustainability measures. The amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources for the reasons provided in Section 5.4, *Energy*, of this EIR. Instead, it would contribute to a reliable and sustainable local water supply, reducing dependence on imported water sources that require comparable or even greater energy inputs for long-distance pumping and treatment. It also would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, including Metropolitan's CAP. Pure Water's energy usage would be limited to that necessary to achieve successful construction and operations; therefore, Pure Water's consumption of resources is justified.

As discussed in Section 5.7, *Hazards and Hazardous Materials*, of this EIR, construction of Pure Water's facilities and components would require the use of typical hazardous materials, which would not pose a substantial risk to the public. Metropolitan and its construction contractor(s) would comply with all applicable federal, state, and local regulations pertaining to hazardous materials use, handling, storage,

and disposal. While Pure Water facilities cross several hazardous materials sites/properties, **HAZ-EC-2** (Site-Specific Safety Plan), **HAZ-EC-3** (Hazardous Materials Management Plan), **HAZ-EC-4** (Utility Location Survey), and **HAZ-EC-5** (Demolition Evaluations) would be implemented. Hazardous materials that may be used at treatment facilities and pump stations would be handled appropriately in accordance with **HAZ-EC-1** (Hazardous Materials Business Plan and Spill Prevention, Control, and Countermeasure Plan), which requires preparation and implementation of a HMBP and SPCC Plan. As such, Pure Water would not have the potential to cause irreversible damage as a result of environmental accidents associated with hazardous materials.

8.4 REFERENCES

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9.0 PROJECT ALTERNATIVES

9.1 INTRODUCTION

This chapter presents the CEQA alternatives analysis for Pure Water. PRC Section 21100(b)(4) and CEQA Guidelines Section 15126.6(a) require that EIRs describe "…a range of reasonable alternatives to the project, or to the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and, evaluate the comparative merits of the alternatives." The CEQA Guidelines set forth the following criteria for identifying and evaluating alternatives:

- ***Feasibility of Alternatives.*** Section 15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." Section 15126.6(f)(1) provides several factors that should be considered with regard to the feasibility of an alternative, including: (1) site suitability; (2) economic viability; (3) availability of infrastructure; (4) general plan consistency; (5) other plans or regulatory limitations; (6) jurisdictional boundaries; and (7) whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site (if an offsite alternative is evaluated).

- ***Range of Alternatives.*** Section 15126.6(a) provides that an EIR need not consider every conceivable alternative but must consider and discuss a reasonable range of feasible alternatives in a manner that will foster informed decision-making and public participation. Section 15126.6(f) further states that "the range of alternatives in an EIR is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." Also, an EIR need not consider an alternative, the impacts of which cannot be reasonably ascertained and the implementation of which is remote and speculative.

- ***Evaluation of Alternatives*.** Section 15126.6(d) provides that EIRs are required to include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." If an alternative would cause significant effects in addition to those that would be caused by the proposed project, the significant effects of that alternative must be discussed, but in less detail than the significant effects of the project.

9.2 SUMMARY OF PURE WATER OBJECTIVES AND SIGNIFICANT IMPACTS

9.2.1 Objectives

Listed below are the seven primary objectives of Pure Water as outlined in Section 3.3, *Objectives for Pure Water*. For purposes of this chapter, each objective has been assigned a number. However, these numbers are for ease of reference only and do not reflect any priority or weighting of the objectives.

- Objective 1: Provide a new high-quality local water source that is reliable, cost-effective, and climate-resilient to help meet regional water demands, with expedited or phased deliveries of such supplies where feasible.

- Objective 2: Diversify Metropolitan's water supply portfolio, increase regional operational flexibility, and provide opportunities for improved coordination and future integration with other water supply and distribution systems.

- Objective 3: Contribute to improving water supply resiliency and overall water quality of local groundwater basins.

- Objective 4: Provide advanced water purification to maximize beneficial reuse of wastewater that would otherwise be discharged into the ocean, while maintaining compliance with water quality requirements for ocean discharge.

- Objective 5: Further statewide goals of increasing use of recycled water as a sustainable, environmentally sound water source for indirect and direct potable reuse.

- Objective 6: Reduce reliance on imported water supplies and provide greater resilience of local water supplies.

- Objective 7: Increase the locally available water supply to protect against seismic events impacting imported water supplies and other service disruptions.

9.2.2 Potentially Significant Environmental Impacts

Based on the evaluations in Chapter 5, *Environmental Impact Analysis*, Pure Water was determined to result in potentially significant impacts within six resources areas, each of which will be subject to mitigation: air quality, biological resources, cultural resources, geology and soils (paleontological resources), noise, and TCRs. Of those, even with mitigation, Pure Water has the potential to result in significant and unavoidable impacts during construction within four environmental resource areas: air quality, cultural resources, noise, and TCRs. Each of these impacts is summarized below.

9.2.2.1 Air Quality

Pure Water would result in potentially significant impacts related to emissions of various criteria pollutants primarily associated with construction exhaust. Mitigation measure **AQ-MM-1** would reduce those emissions to below a level of significance, except with regard to maximum daily emissions of CO. While those CO emissions would not exceed the SCAQMD localized significance threshold or result in potentially significant impacts to sensitive receptors, the CO emissions would exceed the SCAQMD's regional threshold of significance. Mitigation measures **AQ-MM-2** through **AQ-MM-4** would be implemented to further reduce those CO emissions; however, these reductions are not readily quantifiable, as described in Section 5.1.8. Further, there is no additional feasible mitigation available that would avoid or substantially reduce CO emissions associated with Pure Water construction activities. Therefore, Pure Water could result in a potentially significant and unavoidable impact related to regional CO emissions during construction.

9.2.2.2 Biological Resources

Pure Water has the potential to cause significant impacts to special-status plant and animal species; sensitive natural communities; jurisdictional waters and wetlands as defined by the USACE, Regional Board, and CDFW; and local policies and ordinances during construction, as well as due to the reduction

or suspension of discharges at USG-3 during operation. However, implementation of mitigation measures **BIO-MM-1** through **BIO-MM-25** would reduce these impacts to less than significant.

9.2.2.3 Cultural Resources

Pure Water has the potential to result in significant impacts to historical and archaeological cultural resources as a result of construction activities. Implementation of mitigation measures **CUL-MM-1** through **CUL-MM-4** is anticipated to reduce these impacts to a level of less than significant. However, because the locations of some Pure Water facilities and components have not yet been determined, it was infeasible to complete a survey of all areas that would be affected. In addition, it was infeasible to complete an exhaustive survey and testing activities in certain, limited portions of the proposed Pure Water backbone pipeline alignment due to access restrictions. As such, there is a possibility that construction activities may significantly impact as-yet-unidentified historical or archaeological cultural resources. Therefore, impacts are conservatively assessed as potentially significant and unavoidable.

9.2.2.4 Geology and Soils (Paleontological Resources)

Construction of Pure Water would involve excavation in numerous geologic formations with high paleontological potential, including alluvium and alluvial-fan deposits, marine terrace deposits, Palos Verdes Sand, La Habra Formation, Lakewood Formation, Fernando Formation, and the Sycamore Canyon Member of the Puente Formation. Excavation in these formations has the potential to impact unique paleontological resources in a manner that is potentially significant. However, the implementation of mitigation measures **PAL-MM-1** and **PAL-MM-2** would reduce these impacts to less than significant.

9.2.2.5 Noise

Pure Water has the potential to result in temporary, significant noise impacts at nearby NSLUs during construction. Implementation of mitigation measure **NOI-MM-1** would reduce construction noise levels for NSLUs near the Joint Treatment Site to below a level of significance. However, noise impacts associated with construction of other Pure Water facilities and components may be significant and unavoidable at intermittent times.

Construction activities also have the potential to result in significant vibration impacts. However, all anticipated vibration impacts would be reduced to a level of less than significant through the implementation of **NOI-MM-4** through **NOI-MM-6**. Additionally, the operation of the Joint Treatment Site facilities and pump stations has the potential to result in significant noise impacts. However, implementation of mitigation measures **NOI-MM-2** and **NOI-MM-3** would reduce operational noise levels to less than significant.

9.2.2.6 Tribal Cultural Resources

Within the Pure Water area, there are ancestral tribal village sites and a known burial site, which the Gabrieleño Band of Mission Indians-Kizh Nation considers to be a massacre site, which hold cultural and tribal value to the Gabrieleño Band of Mission Indians-Kizh Nation. These sites would be eligible for listing in the California Register of Historic Resources. These sites are considered to be TCRs, and information regarding their locations is held confidentially by the Nation. If these sites are encountered, impacts to such resources would be considered potentially significant. Implementation of mitigation measures **CUL-MM-2** through **CUL-MM-4** and **TCR-MM-1** through **TCR-MM-3** would reduce these impacts. However, depending on the nature and location of any discovery, these mitigation measures

may not reduce impacts to a level of less than significant. Therefore, impacts to TCRs are conservatively assessed as potentially significant and unavoidable.

9.3 ALTERNATIVES SCREENING AND ASSESSMENT PROCESS

As discussed in Chapter 2, *Project Overview and Background*, Pure Water has been under development for many years. As such, Pure Water has been the subject of numerous analyses, studies, evaluations, and reports prepared by Metropolitan, the Sanitation Districts, and their respective teams of expert staff and outside professionals, such as hydrologists, geologists, engineers, and environmental analysts. This process and the substantial body of information and data it generated not only guided the design and selection of Pure Water's physical and operational characteristics, but also informed the assessment of potential alternatives to the program. In addition, Metropolitan carefully considered comments and input it received via the formal public scoping process and its general outreach efforts in determining which alternatives to carry forward and evaluate for Pure Water.

The result has been a robust, fact-based, and comprehensive screening of potential alternatives to the program as proposed, which is described in detail in Appendix L, *Alternatives Screening*. Alternatives described in the appendix include ones related to water supply, water reuse types, water treatment, and water conveyance. While this appendix discusses the most relevant and important alternatives that were considered and eliminated from further review during the screening process, not every detail of every Pure Water permutation considered over the past many years is expressly listed. Rather, that vetting is more fully captured in the numerous analyses, studies, evaluations, and reports that are part the administrative record for Pure Water (CEQA Guidelines Section 15126.6(c) ["Additional information explaining the choice of alternatives may be included in the administrative record."]).

9.4 ALTERNATIVES ANALYZED

This section describes and analyzes six alternatives to Pure Water.[1] The five "build alternatives" consists of capacity and alignment variations to Pure Water, and represent a reasonable range of feasible options that would substantially reduce or eliminate the program's potentially significant impacts, while still meeting its basic objectives.

- No Project Alternative
- 115-MGD Alternative
- Indirect Potable Reuse Only (90-MGD) Alternative
- Seven-foot-diameter Pipeline Alternative
- Northern Pipeline Re-route Alternative
- Los Angeles River Backbone Alignment Alternative

The discussion below describes each alternative, including facilities and components; discusses whether each alternative would meet Pure Water's basic objectives; and compares the potentially significant environmental effects of each alternative against those that are likely to arise from Pure Water. Among

[1] For purposes of this analysis, these alternatives are being compared to the program at full buildout (150 MGD). As such, any reference to "Pure Water" in this section is to the full program as proposed and described in the previous chapters.

other things, this comparative analysis is based on and supported by regional environmental guidelines and plans; aerial mapping of vegetative and biological resources; surveys and studies performed for the Pure Water area that also encompass the footprint of the proposed alternatives; and topographical and geological maps of a broader area within which Pure Water and the alternatives would be located.

9.4.1 No Project Alternative

9.4.1.1 Description

Section 15126.6(e) of the CEQA Guidelines provides that the "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if a project were not approved, based on current plans and consistent with available infrastructure and community services. Here, the No Project Alternative assumes that Pure Water would not be constructed and operated, and that treated wastewater from the Warren Facility would continue to be discharged to the ocean, rather than beneficially reused. Metropolitan would continue to rely on other sources of water to address the region's water supply needs.

9.4.1.2 Comparison to Pure Water

Because this alternative would not construct or operate Pure Water, none of the environmental impacts directly arising from Pure Water would occur. However, without Pure Water any increases in regional water demands that may occur over time would need to be met by pursuing alternative supplies, which would present its own set of environmental issues.

As discussed in Chapter 3, *Project Needs, Benefits, and Objectives,* and in Appendix L, *Alternatives Screening,* Metropolitan is facing increasing constraints and limitations with respect to its imported and local supplies. As such, it is unlikely that meaningful increases in such supplies would be feasible to achieve, particularly in the near term. Likewise, Metropolitan already has a robust conservation program and it is unlikely that additional conservation activities or programs could be pursued to the degree necessary to offset such future demands.

But even assuming it was possible to develop additional supplies, doing so would not be free from environmental impacts. For example, the transport, treatment, and distribution of imported water uses a lot of energy, which, in turn, results in GHG emissions. Likewise, depending on the process employed, such as desalination, the purification and production of local water also can be energy intensive. As another example, the development of imported supplies and local resources often presents concerns with respect to potential impacts on sensitive biological, ecological, cultural, and tribal resources. Lastly, any project involving construction activities almost always creates the potential for noise, air quality and traffic impacts, if only temporary ones. In sum, although it is not possible to numerically quantify the future impacts of the No Project Alternative at this time, it would force Metropolitan to pursue alternative water supplies, which could result in a host of other potentially significant environmental impacts.

Further, imported water, groundwater basins, and other water supplies are likely to become less resilient and less reliable over time as a result of environmental drought, climate change, potential contamination, increased competition for resources, and increased regulatory restrictions. Thus, as future water demands increase in connection with regional population growth or changes in industry,

the No Project Alternative may also result in water supply resilience impacts and temporary water usage restriction impacts.

9.4.1.3 Conclusion

The No Project Alternative would avoid Pure Water's potentially significant and unavoidable impacts to air quality, cultural resources, noise, and TCRs. It also would avoid significant, but mitigable, impacts to sensitive biological resources and geology and soils (paleontological resources), as well as less-than-significant impacts related to energy, GHGs, hazards and hazardous materials, hydrology and water quality, and transportation. Impacts related to land use and planning would be less than significant, similar to Pure Water. However, the No Project Alternative may contribute towards long-term future impacts to biological, ecological, energy, and water supply resources by decreasing Metropolitan's water resilience planning efforts and foregoing the beneficial re-use of a currently unused water resource.

The No Project Alternative would fail to meet any of the basic program objectives listed in Section 9.2.1 because it would not: provide a new high-quality local water source (Objective 1); diversify Metropolitan's water supply portfolio, increase regional operational flexibility, or provide opportunities for improved coordination and future integration with other water systems (Objective 2); contribute to improving water supply resiliency and overall water quality of local groundwater basins (Objective 3); provide advanced water purification to maximize the beneficial reuse of wastewater (Objective 4); further statewide goals of increasing the use of recycled water (Objective 5); reduce reliance on imported water supplies and provide greater resilience of local water supplies (Objective 6); or increase locally available water supplies to protect against service disruptions (Objective 7).

9.4.2 115-MGD Alternative

9.4.2.1 Description

The 115-MGD Alternative would provide for treatment and conveyance of 90 MGD of water for non-potable and IPR purposes, similar to Pure Water. It is anticipated that construction and operation of this alternative would begin with a 30-MGD initial delivery subphase, similar to Pure Water. The amount of water purified and conveyed for DPR purposes under this alternative would be reduced from 60 MGD under Pure Water to 25 MGD. This would reduce the scale of the necessary DPR treatment facilities. The existing Azusa Pipeline would be capable of conveying 25 MGD to the Weymouth WTP, thereby eliminating the need for a new DPR pipeline and associated pump stations. The operational requirements of the Santa Fe Pump Station would be reduced because it would not need to pump as much water. The size and associated construction disturbance width of the backbone pipeline also would be reduced as follows:

- From the AWP Facility to Santa Fe Spreading Grounds, the backbone pipeline would be 6.5 feet in diameter. Trenched pipeline construction would involve excavations approximately 15.5 feet wide and 18.5 feet deep, within the same overall disturbance width as the currently proposed 7-foot-diameter pipeline.

- From Santa Fe Spreading Grounds to Canyon Spreading Grounds, the backbone pipeline would be 4 feet in diameter because this portion of the pipeline would only need to convey 40 MGD. Trenched pipeline construction would involve excavations approximately 10.5 feet wide and

13.5 feet deep, and the associated overall construction disturbance would be reduced by approximately 5 to 8 feet relative to Pure Water.

This alternative was identified because it would reduce some environmental impacts through a reduction in facility construction and operation.

9.4.2.2 Comparison to Pure Water

Air Quality

The 115-MGD Alternative would minimize both construction and operational air quality emissions. Construction emissions would be minimized because the new DPR pipeline and associated pump stations would not be constructed, and construction activities associated with the Joint Treatment Site and backbone conveyance facilities would be incrementally reduced. Operational emissions would be reduced because the quantity of water to be treated and pumped would be reduced. Similar to Pure Water, impacts associated with regional criteria pollutant and precursor emissions during construction of this alternative would be expected to be significant and unavoidable for the following reasons: (1) although the overall schedule duration may be reduced, the overlapping construction scenario for the Joint Treatment Site and backbone conveyance system would likely be similar to Pure Water and (2) although the diameter of the backbone pipeline would be reduced, construction equipment required on a daily basis under this alternative would be similar to that proposed under Pure Water. Therefore, while total emissions would be reduced, maximum daily emissions of criteria pollutants and precursors would be similar to those under Pure Water. Emissions of localized criteria pollutants and precursors, TACs, and other emissions (such as those leading to odors) during construction would likewise be similar to Pure Water, with associated impacts being less than significant.

Biological Resources

The 115-MGD Alternative would avoid the need to construct the new DPR pipeline and associated pump stations and would minimize disturbance widths associated with construction of the backbone pipeline. By reducing the amount of construction disturbance, this alternative would minimize, but not eliminate, significant impacts to sensitive biological resources, including impacts to alluvial fan sage scrub and CAGN. Under both alternatives, these impacts would be reduced to below a level of significance through implementation of the required mitigation measures.

Cultural Resources

The 115-MGD Alternative would avoid the need to construct the new DPR pipeline and associated pump stations and would minimize disturbance widths associated with construction of the backbone pipeline. By reducing the amount of construction disturbance, this alternative would minimize, but not eliminate, a potentially significant and unavoidable impact to historical and archaeological resources that has the potential to occur with the implementation of Pure Water.

Energy

The 115-MGD Alternative would reduce the amount of energy used during construction and operation, through a reduction in both the extent of construction activity and a reduction in the amount of energy expended to treat and pump water. Similar to Pure Water, the energy use impacts associated with this alternative would be less than significant.

Geology and Soils (Paleontological Resources)

Geologic hazards and construction techniques would be similar under the 115-MGD Alternative to Pure Water. The reduction in required construction would incrementally reduce the less-than-significant impacts associated with seismic hazards, geologic instability, expansive soils, erosion, and loss of topsoil that would occur under Pure Water. Potential impacts to paleontological resources also would be incrementally reduced. Similar to Pure Water, potential impacts to paleontological resources would be potentially significant, but reduced to below a level of significance through the implementation of required mitigation measures.

Greenhouse Gas Emissions

The 115-MGD Alternative would reduce the amount of GHGs generated during construction and operation through a reduction in both the extent of construction activity and a reduction in the treatment and pumping of water. Similar to Pure Water, the impacts related to GHG emissions would be less than significant based on consistency with Metropolitan's CAP.

Hazards and Hazardous Materials

The 115-MGD Alternative would incrementally reduce both construction and operational impacts related to hazards and hazardous materials compared to Pure Water. The extent of construction disturbance in areas known or with potential to contain hazardous materials would be reduced. Similarly, the reduction in the amount of water to be treated would incrementally reduce the amount of hazardous material that would be handled in association with operation of the AWP Facility. Thus, this alternative would further reduce the less-than-significant impacts related to hazards and hazardous materials that would result from Pure Water.

Hydrology and Water Quality

The 115-MGD Alternative would avoid impacts to hydrology and water quality resulting from the DPR conveyance facilities (including construction of the pipeline and pump stations, as well as operation of the pump stations). It also would incrementally reduce impacts from construction of the backbone pipeline through a reduction in trenching widths. Thus, this alternative would further reduce the less-than-significant impacts related to hydrology and water quality that would result from Pure Water.

Land Use and Planning

Similar to Pure Water, the 115-MGD Alternative would not result in division of an established community because the infrastructure would be located in existing ROWs and on discrete properties that do not currently provide for public access. It also would not result in a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect because both Pure Water and this alternative would be consistent with such policies.

Noise

The 115-MGD Alternative would reduce construction and operational noise impacts as the new DPR pipeline and associated pump stations would not be constructed or operated. While construction activities associated with the Joint Treatment Site and backbone conveyance facilities would be

incrementally reduced, construction equipment required under this alternative would be similar to that under Pure Water and would be used at similar distances to NSLUs. Similar to Pure Water, the noise impacts related to construction of the backbone pipeline would therefore be significant and unavoidable. Potential vibration impacts also would be reduced through the reduced extent of construction. Similar to Pure Water, vibration impacts would be significant but mitigable.

Transportation

The 115-MGD Alternative would incrementally reduce both construction and operational impacts related to transportation compared to Pure Water. The extent of traffic generated and displaced by construction activities would be reduced. Similarly, the reduction in the amount of water treated would be expected to result in an incremental reduction in operational staffing requirements at the AWP Facility. Thus, this alternative would reduce the less-than-significant impacts related to transportation that would occur from Pure Water.

Tribal Cultural Resources

Because the locations of the new DPR pipeline and associated pump stations are currently unknown, it is not known whether their construction would result in impacts to known TCRs. The reduced extent of disturbance under the 115-MGD Alternative would, however, reduce the potential to impact TCRs. This alternative would therefore minimize, but not eliminate, a potentially significant and unavoidable potential impact to TCRs that has the potential to occur with the implementation of Pure Water.

9.4.2.3 Conclusion

The 115-MGD Alternative would incrementally reduce but not avoid potentially significant and unavoidable impacts to air quality, cultural resources, noise, and TCRs. It also would reduce but not avoid significant, but mitigable, impacts to sensitive biological resources and geology and soils (paleontological resources), as well as less-than-significant impacts related to energy, GHGs, hazards and hazardous materials, hydrology and water quality, and transportation. Impacts related to land use and planning would be less than significant, similar to Pure Water.

The 115-MGD Alternative would feasibly achieve each of the basic program objectives, but to a lesser degree due to the smaller amount of purified water that would be produced and distributed. In particular, it would not maximize beneficial reuse of wastewater that would otherwise be discharged to the ocean (Objective 4).

9.4.3 Indirect Potable Reuse Only (90-MGD) Alternative

9.4.3.1 Description

The 90-MGD Alternative would provide for treatment and conveyance of 90 MGD of water for non-potable and IPR purposes, similar to Pure Water. It is anticipated that construction and operation of this alternative would begin with a 30-MGD initial delivery subphase, similar to Pure Water. This alternative would not include any treatment or conveyance of water for DPR purposes. Thus, the DPR treatment facilities (including at the AWP Facility, Weymouth WTP, and/or a satellite treatment facility), upgrades to the existing Azusa Pipeline, and construction of a new DPR pipeline and pump stations would not occur. Imported water deliveries at USG-3 would not be curtailed. The size and operational requirements of the backbone conveyance pump stations would also be reduced because they would

not need to pump as much water. The size and associated construction disturbance width of the backbone pipeline also would be reduced as follows:

- From the AWP Facility to the Santa Fe Spreading Grounds, the backbone pipeline would be 5.5 feet in diameter. Trenched pipeline construction would involve excavations approximately 13.5 feet wide and 17.5 feet deep. The overall disturbance width would be reduced by approximately 10 feet.

- From Santa Fe Spreading Grounds to Canyon Spreading Grounds, the backbone pipeline would be 2.5 feet in diameter because this portion of the pipeline would only need to convey 15 MGD. Trenched pipeline construction would involve excavations approximately 8.5 feet wide and 11 feet deep, and the associated overall construction disturbance would be reduced by approximately 10 to 12 feet.

This alternative was identified because it would reduce some environmental impacts through a reduction in facility construction and operation.

9.4.3.2 Comparison to Pure Water

Air Quality

The 90-MGD Alternative would minimize both construction and operational air quality emissions. Construction emissions would be minimized because DPR conveyance facilities would not be built, and construction activities associated with the Joint Treatment Site and backbone conveyance facilities would be reduced. Operational emissions would be reduced because the quantity of water to be treated and pumped would be less. Similar to Pure Water, impacts associated with regional criteria pollutant and precursor emissions during construction would be expected to be significant and unavoidable for the following reasons: (1) although the overall schedule duration may be reduced, the overlapping construction scenario for the Joint Treatment Site and backbone conveyance system would likely be similar to Pure Water and (2) although the size of the backbone pipeline would be reduced, construction equipment required on a daily basis under this alternative would be similar to that proposed under Pure Water. Therefore, while total emissions would be reduced, maximum daily emissions of criteria pollutants and precursors would be similar to those under Pure Water. Emissions of localized criteria pollutants and precursors, TACs, and other emissions (such as those leading to odors) during construction would likewise be similar to Pure Water, with associated impacts being less than significant.

Biological Resources

The 90-MGD Alternative would avoid the need to construct DPR conveyance facilities and would minimize disturbance widths associated with construction of the backbone pipeline. By reducing the amount of construction disturbance, this alternative would minimize, but not eliminate, significant impacts to sensitive biological resources, including impacts to alluvial fan sage scrub and CAGN. Potential indirect impacts to water-dependent habitats and associated sensitive species due to the suspension of imported water deliveries would be avoided under this alternative. Under both alternatives, impacts to biological resources would be reduced to below a level of significance through implementation of the required mitigation measures.

Cultural Resources

The 90-MGD Alternative would avoid the need to construct DPR conveyance facilities and would minimize disturbance widths associated with construction of the backbone pipeline. By reducing the amount of construction disturbance, this alternative would minimize, but not eliminate, a potentially significant and unavoidable impact to historical and archaeological resources that has the potential to occur with the implementation of Pure Water.

Energy

The 90-MGD Alternative would reduce the amount of energy used during construction and operation through a reduction in both the extent of construction activity and a reduction in the amount of energy expended to treat and pump water. Similar to Pure Water, the energy use impacts associated with this alternative would be less than significant.

Geology and Soils (Paleontological Resources)

Geologic hazards and construction techniques would be similar under the 90-MGD Alternative to Pure Water. The reduction in required construction would incrementally reduce the less-than-significant impacts associated with seismic hazards, geologic instability, expansive soils, erosion, and loss of topsoil. Potential impacts to paleontological resources also would be incrementally reduced. Similar to Pure Water, potential impacts to paleontological resources would be potentially significant, but reduced to below a level of significance through the implementation of required mitigation measures.

Greenhouse Gas Emissions

The 90-MGD Alternative would reduce the amount of GHGs generated during construction and operation through a reduction in both the extent of construction activity and a reduction in the treatment and pumping of water. Similar to Pure Water, the impacts related to GHG emissions would be less than significant based on consistency with Metropolitan's CAP.

Hazards and Hazardous Materials

The 90-MGD Alternative would incrementally reduce both construction and operational impacts related to hazards and hazardous materials compared to Pure Water. The extent of construction disturbance in areas known or with potential to contain hazardous materials would be reduced. Similarly, the reduction in the amount of water to be treated would incrementally reduce the amount of hazardous material that would be handled in association with operation of the AWP Facility. Thus, this alternative would further reduce the less-than-significant impacts related to hazards and hazardous materials that would result from Pure Water.

Hydrology and Water Quality

The 90-MGD Alternative would avoid impacts to hydrology and water quality resulting from construction and operation of the DPR conveyance facilities. It also would incrementally reduce impacts from construction of the backbone pipeline through a reduction in trenching widths. Thus, this alternative would further reduce the less-than-significant impacts related to hydrology and water quality that would result from Pure Water.

Land Use and Planning

Similar to Pure Water, the 90-MGD Alternative would not result in division of an established community because the infrastructure would be located in existing ROWs and on discrete properties that do not currently provide for public access. It also would not result in a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect because both Pure Water and this alternative would be consistent with such policies.

Noise

The 90-MGD Alternative would reduce construction and operational noise impacts as the DPR facilities would not be constructed or operated. While construction activities associated with the Joint Treatment Site and backbone conveyance facilities would be incrementally reduced, construction equipment required under this alternative would be similar to the equipment proposed under Pure Water and would be used at similar distances to NSLUs. Similar to Pure Water, the noise impacts related to construction of the backbone pipeline would therefore be significant and unavoidable. As the equipment types and distances to NSLUs would be similar under this alternative, vibration impacts also would be similar to what would occur under Pure Water. The physical extent of potential vibration impacts would be reduced through the reduced extent of construction and, like Pure Water, vibration impacts would be significant but mitigable.

Transportation

The 90-MGD Alternative would incrementally reduce both construction and operational impacts related to transportation compared to Pure Water. The extent of traffic generated and displaced by construction activities would be reduced because of the reduction in facility construction. Similarly, the reduction in the amount of water treated would be expected to result in an incremental reduction in operational staffing requirements at the AWP Facility. Thus, this alternative would reduce the less-than-significant impacts related to transportation that would occur from Pure Water.

Tribal Cultural Resources

The omission of the DPR conveyance facilities and reduction in pipeline width under the 90-MGD Alternative would result in an associated reduction in the extent of subsurface disturbance. As a result, the potential to impact TCRs would be reduced. This alternative would therefore minimize, but not eliminate, a potentially significant and unavoidable potential impact to TCRs that has the potential to occur with the implementation of Pure Water.

9.4.3.3 Conclusion

The 90-MGD Alternative would reduce but not avoid potentially significant and unavoidable impacts to air quality, cultural resources, noise, and TCRs. It also would reduce but not avoid significant, but mitigable, impacts to sensitive biological resources and geology and soils (paleontological resources), as well as less-than-significant impacts related to energy, GHGs, hazards and hazardous materials, hydrology and water quality, and transportation. Impacts related to land use and planning would be less than significant, similar to Pure Water.

This alternative would feasibly achieve each of the basic program objectives, but to a lesser degree due to the smaller amount of purified water that would be produced and distributed. In particular, this alternative would not maximize beneficial reuse of wastewater that would otherwise be discharged to the ocean (Objective 4) and would not further statewide goals of increasing use of recycled water as a sustainable, environmentally sound water source for both indirect and direct potable reuse (Objective 5); this alternative would provide a water source for indirect potable reuse but not direct potable reuse.

9.4.4 Seven-foot-diameter Pipeline Alternative

9.4.4.1 Description

The Seven-foot-diameter Pipeline Alternative would be similar to Pure Water, with the exception of the sizing of the backbone pipeline north of Whittier Narrows. The portion of the backbone pipeline north of Whittier Narrows would be seven feet in diameter rather than the nine-foot-diameter under Pure Water. This pipeline size would provide sufficient capacity to convey all Pure Water flows to their intended destinations because the amount of water to be conveyed in the pipeline decreases as water is delivered for groundwater recharge and non-potable water uses. It would not, however, provide capacity in the northern portion of the pipeline for potential future integration with other regional water supply systems.

Construction of a seven-foot-diameter pipeline north of Whittier Narrows, in comparison to the nine-foot-diameter pipeline for Pure Water, would reduce the width of the pipeline trench from approximately 18 feet to 11 to 12 feet, and the depth from up to 21 feet deep to approximately 12 to 16 feet deep. The excavated tunnel diameter and total construction zone width also would be reduced accordingly. Installation of a smaller diameter pipe also would enable approximately 2.6 miles more of the pipeline to be constructed via trenched construction rather than tunneling, which would involve minor changes to small portions of the alignment (**Figure 9-1**).

This alternative was identified because it would reduce the width of disturbance in trenched portions of the alignment, thereby minimizing some environmental impacts as described below.

9.4.4.2 Comparison to Pure Water

Air Quality

The portion of the backbone pipeline north of Whittier Narrows (i.e., Reaches 6 through 8) with a reduced diameter would involve different construction methods than the nine-foot diameter pipeline proposed under Pure Water, based on standard construction best practices for the size of pipe and construction conditions. Specifically, the seven-foot-diameter pipeline would involve simultaneous trenching, pipe jacking, and microtunneling for each of the Reaches 6, 7, and 8. The nine-foot-diameter pipeline as currently proposed would involve traditional tunneling for Reach 6; simultaneous trenching, shield tunneling, and traditional tunneling for Reach 7; and simultaneous trenching and pipe jacking for Reach 8. These differences would result in different simultaneous construction method scenarios and therefore different maximum daily criteria pollutant and precursor emissions, as well as TAC emissions.

As stated above, construction of the nine-foot diameter pipeline would involve traditional tunneling techniques along Reach 6. Construction of the seven-foot-diameter pipeline for Reach 6 would require trenching, pipe jacking, and microtunneling; each technique would individually generate more emissions

Current Backbone Alignment (9' Diameter Pipe)

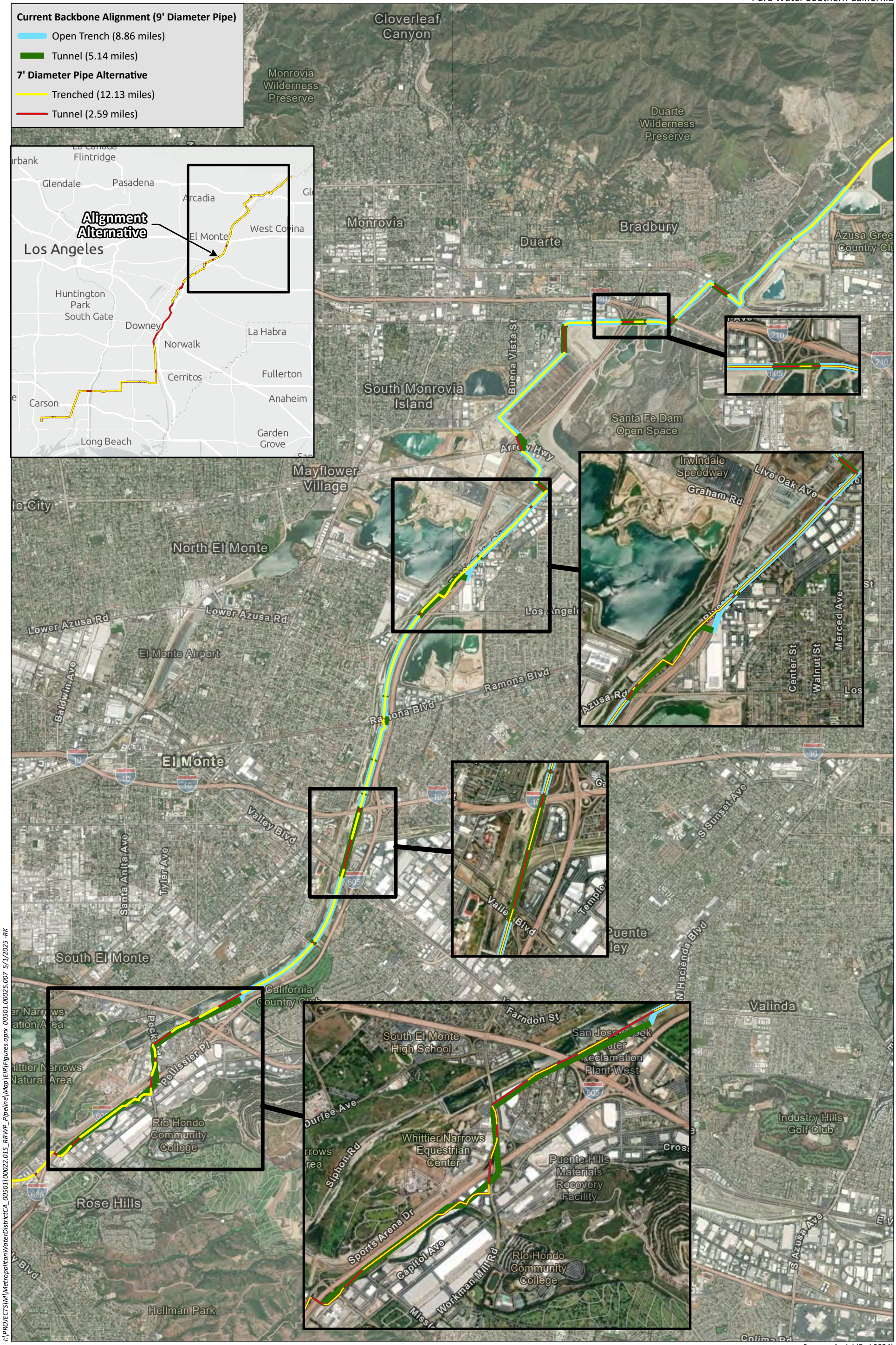
Open Trench (8.86 miles)

Tunnel (5.14 miles)

7' Diameter Pipe Alternative

Trenched (12.13 miles)

Tunnel (2.59 miles)



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0 4,500 Feet

Source: Aerial (Esri 2024)

PUREWATER SOUTHERN CALIFORNIA

Seven-foot-diameter Pipeline Alternative

Figure 9-1

per day than traditional tunneling due to the construction equipment and supporting activities required (refer to **Tables 5.1-6** and **5.1-7**). As a result, construction of the seven-foot-diameter pipeline would result in greater daily emissions of all criteria pollutants, ozone precursors, and TACs than the nine-foot-diameter pipeline in Reach 6.

The seven-foot-diameter and nine-foot-diameter pipelines would both involve three simultaneous construction methods in Reach 7, and both would involve trenching; however, pipe jacking and microtunneling for the seven-foot-diameter pipeline would generate more emissions per day than shield tunneling and traditional tunneling for the nine-foot-diameter pipeline. Construction of the seven-foot-diameter pipeline would therefore result in greater daily emissions of all criteria pollutants, ozone precursors, and TACs than the nine-foot-pipeline in Reach 7.

The seven-foot-diameter and nine-foot-diameter pipelines would both involve simultaneous trenching and pipe jacking in Reach 8; however, the seven-foot-diameter pipeline would also involve microtunneling simultaneously with trenching and pipe jacking. Construction of the seven-foot-diameter pipeline would therefore result in greater daily emissions of all criteria pollutants, ozone precursors, and TACs than the nine-foot-pipeline in Reach 8.

Operations under this alternative would be the same as those under Pure Water; therefore, operational emissions of regional and localized criteria pollutants and precursors, TACs, and other emissions such as those leading to odors under this alternative would be the same as those under Pure Water.

This alternative is considered to have increased impacts to air quality, specifically related to construction emissions, relative to Pure Water, thus intensifying the significant and unavoidable air quality impact that is already anticipated as a result of Pure Water. Under both alternatives, impacts would be significant and unavoidable.

Biological Resources

The Seven-foot-diameter Pipeline Alternative would vary from Pure Water based on the type of construction and width of trenched construction. In the vicinity of Whittier Narrows, San Jose Creek, and Rivergrade Road, construction of portions of the backbone pipeline under this alternative would be accomplished via trenched, rather than trenchless, construction adjacent to the San Gabriel River. Typically, trenched construction would result in greater impacts to sensitive biological resources than tunneled construction because it would involve surface disturbance and associated noise and human activity along the pipeline corridor, rather than limited to discrete shafts.

However, there are minimal biological resources present in the areas that would be constructed via trenched rather than trenchless construction under this alternative compared to Pure Water (see **Figures 5.2-9r**, **5.2-9u**, and **5.2-9y**). Thus, impacts to the trenched portions of the alignment under this alternative would be reduced as compared to those of Pure Water. This is due to the smaller trench size and associated reduction in the overall construction zone width. In particular, the area north of I-210 supports several sensitive vegetation communities (primarily coastal sage scrub and alluvial fan sage scrub) and associated CAGN and other sensitive avian species (see **Figures 5.2-9y** and **5.2-9z**). Thus, reducing the construction disturbance widths in this area would reduce the extent of impacts in this biologically sensitive area. Overall, therefore, this alternative is considered to have reduced impacts to biological resources relative to Pure Water. Under both alternatives, impacts would be reduced to below a level of significance through the implementation of required mitigation measures.

Cultural Resources

While construction techniques would vary, the overall amount of subsurface disturbance would be similar under this alternative to Pure Water. As a result, the potential to impact historical and archaeological resources would be similar (although resources encountered by tunneling activities under Pure Water are less likely to be identified). This alternative would therefore result in a similar significant and unavoidable impact to historical and archaeological resources compared to Pure Water.

Energy

Construction of the portion of the backbone pipeline north of Whittier Narrows (Reaches 6 through 8) at a reduced diameter would require different construction methods than construction of the nine-foot-diameter pipeline proposed under Pure Water, and would therefore result in different energy usage. Overall, trenching construction methods require more energy than trenchless construction methods. The seven-foot-diameter pipeline involves trenching, in addition to pipe jacking and microtunneling, for Reach 6, whereas the nine-foot-diameter pipeline involves only traditional tunneling for Reach 6; therefore, construction of Reach 6 of the seven-foot-diameter pipeline would result in greater energy usage than construction of Reach 6 of the nine-foot-diameter pipeline. The seven-foot-diameter pipeline also involves a greater proportion of trenching in both Reaches 7 and 8. As such, construction of the seven-foot-diameter pipeline would result in greater overall energy consumption than construction of the nine-foot-pipeline. However, similar to Pure Water, construction energy use impacts associated with this alternative would be less than significant. Operations under this alternative would be the same as those under Pure Water; therefore, operational energy use and associated impacts would be the same as those under Pure Water.

Geology and Soils (Paleontological Resources)

Geologic hazards and the suite of construction techniques (i.e., trenching, pipe jacking, microtunneling, traditional tunneling, shield tunneling) would be similar under this alternative to Pure Water. Therefore, impacts associated with seismic hazards, geologic instability, expansive soils, erosion, and loss of topsoil would be less than significant under this alternative, similar to Pure Water. Potential impacts to paleontological resources due to subsurface disturbance also would be similar. Increasing the amount of trenched (as opposed to tunneled) construction would increase the likelihood that fossils impacted by construction could be recovered and made available for scientific research purposes. Similar to Pure Water, potential impacts to paleontological resources would be potentially significant, but reduced to below a level of significance through the implementation of required mitigation measures.

Greenhouse Gas Emissions

Construction of the portion of the backbone pipeline north of Whittier Narrows with a reduced diameter would require different methods than those planned for the nine-foot-diameter pipeline proposed under Pure Water, and would therefore result in different GHG emissions. Overall, trenching construction methods generate more GHG emissions than trenchless construction methods. The Seven-foot-diameter Pipeline Alternative would involve more trenching than construction of Pure Water. As such, this alternative would result in greater overall construction GHG emissions. However, similar to Pure Water, the impacts related to GHG emissions would be less than significant based on consistency with Metropolitan's CAP. Operations under this alternative would be the same as those under Pure Water; therefore, operational GHG emissions under this alternative would be the same as those under Pure Water.

Hazards and Hazardous Materials

This alternative would incrementally reduce potential construction impacts related to hazards and hazardous materials compared to Pure Water, as the extent of construction disturbance in areas known or with potential to contain hazardous materials would be reduced. Thus, this alternative would further reduce the less-than-significant impacts related to hazards and hazardous materials that would result from Pure Water.

Hydrology and Water Quality

The hydrological conditions and construction techniques would be similar under this alternative to Pure Water. Therefore, hydrology and water quality impacts also would be less than significant under this alternative, consistent with Pure Water.

Land Use and Planning

Similar to Pure Water, the Seven-foot-diameter Pipeline Alternative would not result in division of an established community because the infrastructure would be located in existing ROWs and on discrete properties that do not currently provide for public access. It also would not result in a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect because both Pure Water and this alternative would be consistent with such policies.

Noise

Construction of the portion of the backbone pipeline north of Whittier Narrows at a reduced diameter would require different methods than construction of the nine-foot-diameter pipeline proposed under Pure Water, which would result in different levels of noise generation. Trenching construction methods are more noise-intensive than trenchless construction methods because they involve aboveground equipment usage along the entirety of the portion of the pipeline being constructed, whereas with trenchless methods, equipment is primarily underground, except for some equipment staged and used at intermittent access shafts. Therefore, with trenchless methods, there would be a lower potential for NSLUs to be exposed to construction-related noise. The Seven-foot-diameter Pipeline Alternative would involve a greater amount of trenching than Pure Water. As such, construction of this alternative would result in increased noise impacts. Similar to Pure Water, the noise impacts related to construction of the backbone pipeline would be potentially significant and unavoidable. This alternative would somewhat increase the extent of vibration impacts associated with vibratory roller operation due to the increased amount of trenching but would decrease potential vibration from tunneling or microtunneling operations. Similar to Pure Water, vibration impacts would be significant but mitigable. In summary, construction noise and vibration impacts would be greater under this alternative than for Pure Water.

Transportation

Construction of the portion of the backbone pipeline north of Whittier Narrows at a reduced diameter would require different methods than construction of the nine-foot-diameter pipeline proposed under Pure Water. Overall, trenching construction methods generate more daily traffic, due to a larger number of workers and increased haul trucks necessary to transport soils to and from the trench, and potential transportation disruption due to construction in roadways than trenchless construction methods. The Seven-foot-diameter Pipeline Alternative would involve more trenching than construction of Pure

Water. As such, this alternative would require more lane closures and detours for a longer duration and result in greater overall transportation impacts. However, similar to Pure Water, construction-related impacts related to transportation would be less than significant because implementation of **TRA-EC-1** would ensure that this alternative would not conflict with a program, plan, ordinance, or policy; result in significant traffic hazards; or result in significant impacts to emergency access. Operational VMT generated by this alternative would be the same as that generated for Pure Water, resulting in a less-than-significant impact.

Tribal Cultural Resources

While construction techniques would vary, the overall amount of subsurface disturbance would be similar under this alternative to Pure Water. As a result, the potential to impact TCRs would be similar (although resources encountered by tunneling activities under Pure Water are less likely to be identified). This alternative would therefore result in a similar significant and unavoidable impact to TCRs compared to Pure Water.

9.4.4.3 Conclusion

The Seven-foot-diameter Pipeline Alternative would result in increased significant and unavoidable impacts to air quality and noise because of the greater proportion of trenched (as opposed to tunneled) pipeline construction. Significant and unavoidable potential impacts to cultural resources and TCRs would be similar to those that would occur under Pure Water. This alternative would reduce but not avoid significant, but mitigable, impacts to sensitive biological resources. Impacts to geology and soils (paleontological resources) would be significant but mitigable, similar to those of Pure Water.

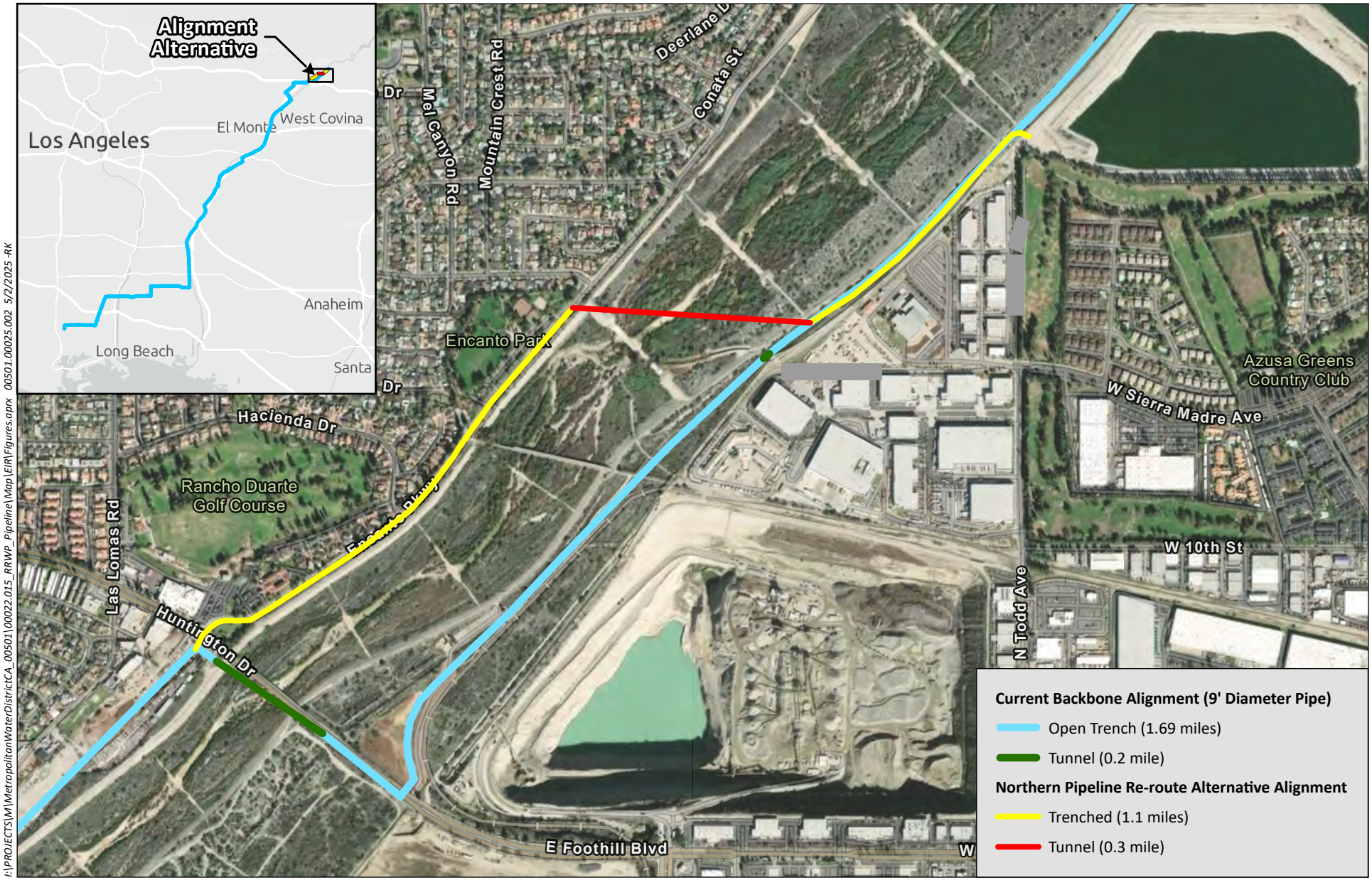
This alternative would reduce, but not avoid, less-than-significant impacts related to hazards and hazardous materials. It also would result in increased (but still less than significant) impacts related to energy, GHG emissions, and transportation. Neither Pure Water nor the Seven-foot-diameter Pipeline Alternative would result in adverse impacts related to hydrology and water quality or land use and planning.

The Seven-foot-diameter Pipeline Alternative would achieve most of the basic program objectives to the same extent as Pure Water. However, under this alternative, the backbone pipeline would be sized to convey flows from Pure Water only, and would not have adequate capacity to convey additional flows from other potential regional water supply and distribution systems. It would not, therefore, provide for increased regional operational flexibility or provide opportunities for improved coordination and future integration with other water supply and distribution systems (Objective 2) to the same extent as the nine-foot-diameter pipeline under Pure Water.

9.4.5 Northern Pipeline Re-route Alternative

9.4.5.1 Description

The Northern Pipeline Re-route Alternative would be similar to Pure Water, with the only difference being the alignment of the backbone pipeline north of Huntington Drive. Five potential alignments were identified and evaluated for this northernmost portion of the pipeline (Metropolitan 2025). Of these potential options, the most favorable alignment other than the currently proposed backbone alignment was identified as the Encanto Parkway Alternative (**Figure 9-2**). Rather than crossing from the west to east side of the San Gabriel River at Huntington Drive, this alternative would continue north on Encanto



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Source: Aerial Photo (Esri 2024)

0 1,000 Feet

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PUREWATER SOUTHERN CALIFORNIA

Northern Pipeline Re-route Alternative

Figure 9-2

Parkway to Royal Oaks Drive, where it would cross the San Gabriel River using trenchless construction. From that point, it would continue north to a point of connection with the San Gabriel Canyon Spreading Grounds. This portion of the alignment would be routed slightly east of the currently proposed alignment, within private property, an Army National Guard facility owned by the State of California, and the Azusa Rockery and Geology Park owned by the City of Azusa. This alternative would use trenchless construction to cross under the San Gabriel River (approximately 1,600 feet); the remainder would use trenched construction. This alternative would be a total of approximately 875 feet shorter than the backbone pipeline as currently proposed, including approximately 1,330 feet less of trenched construction and approximately 455 feet more trenchless construction. There would be no operational differences between this alternative and Pure Water.

This alternative was identified because it would reduce impacts to sensitive biological resources along the northern portion of the San Gabriel River.

9.4.5.2 Comparison to Pure Water

Air Quality

The revised alignment of the Northern Pipeline Re-route Alternative would involve trench construction adjacent to the San Gabriel River and trenchless construction to cross under the San Gabriel River. This is consistent with the construction methods that would be used to construct this portion of the alignment under Pure Water. Under both alternatives, the trenching method and trenchless method of construction would be anticipated to occur simultaneously, resulting in similar daily air pollutant emissions (including regional and localized criteria pollutant and precursor emissions, TACs, and other emissions, such as those leading to odors). As such, this alternative is considered to have similar impacts to air quality relative to Pure Water. Under both alternatives, impacts associated with regional criteria pollutant and precursor emissions would be significant and unavoidable.

Operations under this alternative would be the same as those under Pure Water; therefore, operational emissions of regional and localized criteria pollutants and precursors, TACs, and other emissions such as those leading to odors under this alternative would be the same as those under Pure Water.

Biological Resources

The Northern Pipeline Re-route Alternative would substantially reduce impacts to sensitive alluvial fan sage scrub habitat, including areas occupied by federally listed threatened CAGN. This alternative would therefore minimize significant biological impacts that would occur with the implementation of Pure Water. Under both alternatives, impacts would be reduced to below a level of significance through the implementation of required mitigation measures.

Cultural Resources

The revised alignment of the Northern Pipeline Re-route Alternative would avoid disturbance to sites PW-S-001 and PW-S-002, which are historic refuse scatters. While these sites do not appear to be eligible for the NRHP and CRHR, they have not yet been formally assessed due to lack of access permissions; therefore, impacts to them by the backbone pipeline as currently proposed are considered potentially significant. Additionally, because this alternative would involve a smaller amount of construction disturbance than Pure Water, the potential to encounter additional historical and archaeological resources, which have not previously been identified, would be reduced. This alternative

would therefore reduce, but not avoid, a potentially significant and unavoidable impact to historical and archaeological resources that has the potential to occur with the implementation of Pure Water.

Energy

The revised alignment of the Northern Pipeline Re-route Alternative would involve trench construction adjacent to the San Gabriel River and trenchless construction to cross under the San Gabriel River. This is consistent with the construction methods that would be used to construct this portion of the alignment that is proposed under Pure Water. The revised alignment and the alignment as currently proposed would involve similar proportions of trenching and trenchless construction and would therefore result in similar construction energy usage. Operations under this alternative would be the same as those under Pure Water; therefore, operational energy use would be the same. Similar to Pure Water, the energy use impacts associated with this alternative would be less than significant.

Geology and Soils (Paleontological Resources)

Geologic hazards and construction techniques would be similar under the Northern Pipeline Re-route Alternative to Pure Water. Therefore, impacts associated with seismic hazards, geologic instability, expansive soils, erosion, and loss of topsoil also would be less than significant under this alternative. Potential impacts to paleontological resources also would be similar to those for the backbone alignment as proposed, with an incremental reduction in potential impacts due to the reduced length of pipeline under this alternative. Similar to Pure Water, potential impacts to paleontological resources would be potentially significant, but reduced to below a level of significance through the implementation of required mitigation measures.

Greenhouse Gas Emissions

The revised alignment of the Northern Pipeline Re-route Alternative would involve trench construction adjacent to the San Gabriel River and trenchless construction to cross under the San Gabriel River. This is consistent with the construction methods that would be used to construct this portion of the backbone pipeline that is proposed under Pure Water. The revised alignment and alignment as currently proposed would involve similar proportions of trenching and trenchless construction and would therefore result in similar construction GHG emissions. Operations under this alternative would be the same as those under Pure Water; therefore, operational GHG emissions under this alternative would be the same. Similar to Pure Water, the impacts related to GHG emissions would be less than significant based on consistency with Metropolitan's CAP.

Hazards and Hazardous Materials

Overall, impacts related to hazards and hazardous materials under the Northern Pipeline Re-route Alternative would be similar to those that would occur with Pure Water. This alternative does, however, pass near a hazardous materials site and a landfill that would be avoided by the currently proposed backbone alignment (Metropolitan 2025). This would represent a potential incremental increase in impacts. Nonetheless, the same environmental commitments identified for Pure Water would help to ensure that impacts related to this issue area would remain less than significant.

Hydrology and Water Quality

The hydrological conditions and construction techniques would be similar under the Northern Pipeline Re-route Alternative to Pure Water. Therefore, hydrology and water quality impacts also would be less than significant under this alternative, consistent with Pure Water.

Land Use and Planning

Similar to Pure Water, the Northern Pipeline Re-route Alternative would not result in division of an established community because the infrastructure would be located in existing ROWs and on discrete properties that do not currently provide for public access. It also would not result in a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect because both Pure Water and this alternative would be consistent with such policies.

Noise

Construction of the backbone pipeline under the Northern Pipeline Re-route Alternative would occur adjacent to residential NSLUs located along Encanto Parkway. These NSLUs would be exposed to elevated construction noise levels based on the proximity of trenching activities. There are no residences near this same segment of the Pure Water alignment as currently proposed. Therefore, this alternative would result in increased construction noise impacts for this segment of the backbone pipeline, resulting in increased significant noise impacts compared to construction of Pure Water. Similar to Pure Water, the impacts related to construction of the backbone pipeline would be significant and unavoidable. Due to the closer proximity to residences along Encanto Parkway, potential vibration impacts associated with a vibratory roller also would be increased in this segment. Similar to Pure Water, vibration impacts would be significant but mitigable.

Transportation

Construction methods for the Northern Pipeline Re-route Alternative would be consistent with the methods that would be used to construct this portion of the backbone pipeline that is proposed under Pure Water. The revised alignment and alignment as currently proposed would generate similar levels of traffic. Because it would result in additional trenched construction within a relatively narrow roadway, this alternative would result in an incremental increase in potential impacts related to traffic hazards and emergency access. Similar to Pure Water, however, implementation of **TRA-EC-1** would ensure that impacts would remain less than significant.

Tribal Cultural Resources

There are no known TCRs in the vicinity of the backbone pipeline segment affected by the Northern Pipeline Re-route Alternative; however, the extent of construction disturbance would be similar under this alternative to Pure Water. Therefore, impacts to TCRs would be similar and would be potentially significant and unavoidable.

9.4.5.3 Conclusion

The Northern Pipeline Re-route Alternative would reduce, but would not eliminate, significant and potentially unavoidable impacts to cultural resources. It would, however, have the potential to

incrementally increase significant and unavoidable impacts related to noise. Impacts related to air quality and TCRs would be significant and unavoidable, similar to those under Pure Water.

This alternative would reduce, but not eliminate, significant but mitigable impacts to sensitive biological resources. Geology and soils (paleontological resource) impacts would remain significant but mitigable, similar to Pure Water, impacts related to hazards and hazardous materials and transportation also would incrementally increase but would remain less than significant. Impacts related to energy, GHGs, hydrology and water quality, and land use and planning would be less than significant, as with Pure Water.

The Northern Pipeline Re-route Alternative would serve the same functions as Pure Water; therefore, it would achieve all of the basic program objectives to the same degree.

9.4.6 Los Angeles River Backbone Alignment Alternative

9.4.6.1 Description

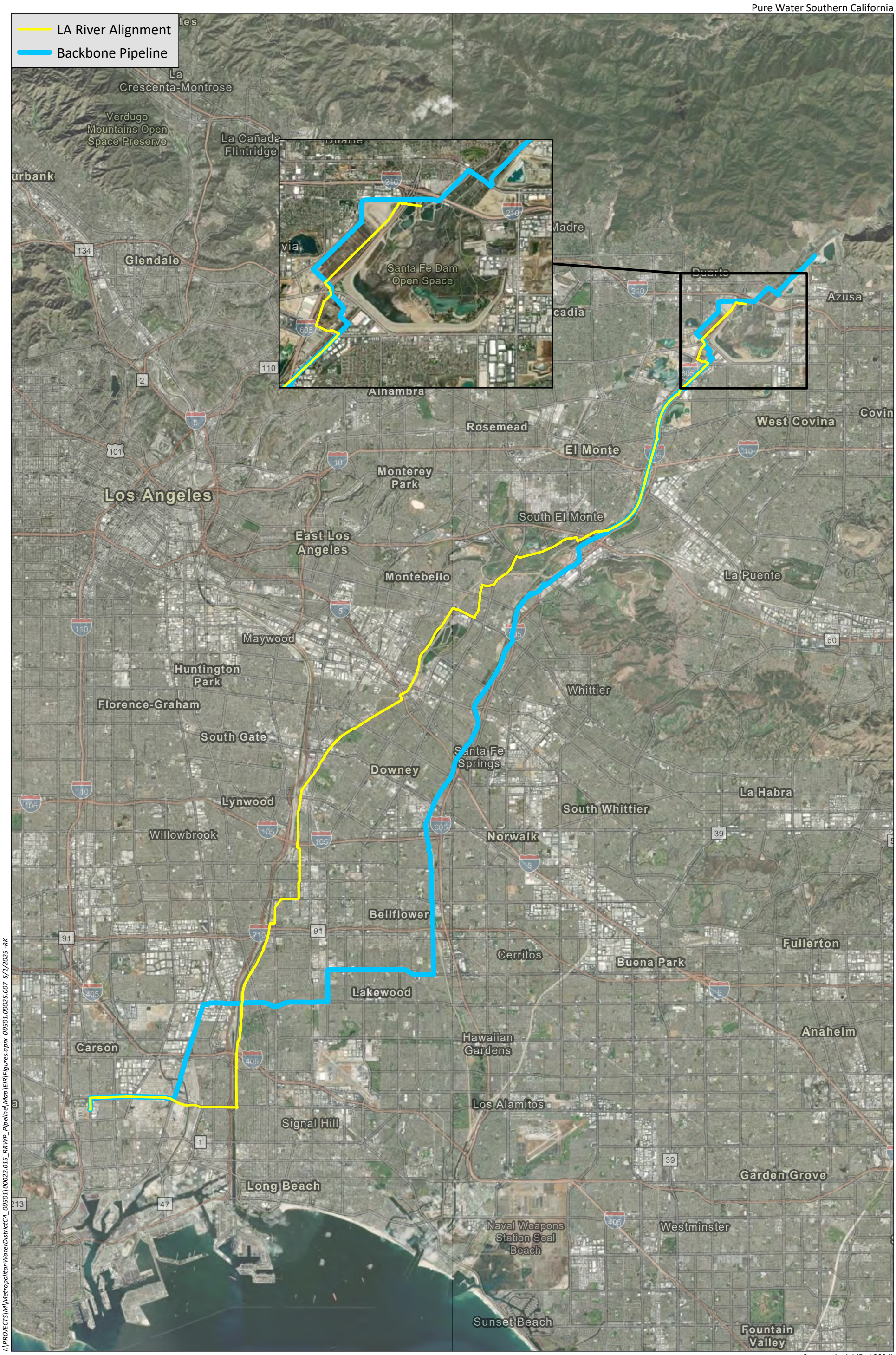
The Los Angeles River Backbone Alignment Alternative would be consistent with Pure Water regarding the amount and type of water treated and conveyed. The portion of the backbone alignment northeast of Whittier Narrows would follow the San Gabriel River, similar to the backbone alignment as proposed; however, the southern portion of the alignment would vary (**Figure 9-3**). The pipeline would primarily be located in SCE and LACFCD ROW paralleling the Los Angeles River and then the Rio Hondo Channel. To avoid locations where a sufficient construction corridor does not exist, the pipeline would move away from paralleling the river to be within public street ROWs for portions of the alignment. At Whittier Boulevard, the pipeline would leave the Rio Hondo Channel and head east in existing public ROWs to the San Gabriel River (Metropolitan 2020). This alignment would be a total of approximately 36.5 miles, or approximately 2.5 miles shorter than the currently proposed alignment.

This alternative was identified as part of the preliminary planning for Pure Water and was determined to be a potentially feasible alignment.

9.4.6.2 Comparison to Pure Water

Air Quality

Construction of the Los Angeles River backbone alignment would involve the same types of construction methods as Pure Water, including both trenching and trenchless methods, based on the same size pipeline as Pure Water and similar land uses the alignment would traverse. Therefore, while total air pollutant emissions would be less due to the slightly shorter length of pipe, daily air pollutant emissions (including regional and localized criteria pollutant and precursor emissions, TACs, and other emissions, such as those leading to odors) would be similar. Operations under this alternative would be the same as those under Pure Water; therefore, operational emissions of regional and localized criteria pollutants and precursors, TACs, and other emissions such as those leading to odors under this alternative would be the same. As such, this alternative is considered to have similar impacts to air quality relative to Pure Water. Under both alternatives, impacts associated with regional criteria pollutant and precursor emissions would be significant and unavoidable.



Source: Aerial (Esri 2024)

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PUREWATER SOUTHERN CALIFORNIA

Los Angeles River Backbone Alignment Alternative

Figure 9-3

Biological Resources

The Los Angeles River generally is more heavily disturbed and contains fewer resources than the San Gabriel River. The Los Angeles River Backbone Alignment Alternative would minimize impacts to non-native grassland adjacent to the San Gabriel River, as well as minimize the potential for adverse indirect impacts to sensitive vegetation communities and species associated with the river. However, the majority of sensitive resources are located north of the point where this alignment joins the currently proposed alignment, and thus impacts in those areas would be the same under either alternative. Under both alternatives, these impacts would be reduced to below a level of significance through implementation of the required mitigation measures.

Cultural Resources

Similar to the alignment as proposed, construction of the Los Angeles River backbone pipeline under this alternative would have very high potential to encounter sensitive cultural resources due to the setting along the river and the age of encompassing communities. In particular, this alignment would be consistent with the alignment of the currently proposed backbone alignment in impacting two historic refuse scatters that have not yet been evaluated for significance. This alternative could, however, incrementally reduce impacts due to the shorter length of the alignment. Nonetheless, similar to Pure Water, a potentially significant and unavoidable impact to historical and archaeological resources has the potential to occur.

Energy

Construction of the Los Angeles River backbone alignment under this alternative would involve the same types of construction methods as Pure Water and a similar construction schedule. Therefore, energy usage during construction of this alternative would be similar to Pure Water but could be incrementally reduced due to the shorter length of pipeline. Since the same amount of water is being pumped a similar distance with a similar elevation gain, energy usage associated with conveyance of product water along this alternative alignment would be similar to Pure Water. Under both alternatives, impacts associated with energy consumption would be less than significant.

Geology and Soils (Paleontological Resources)

Geologic hazards and construction techniques would be similar under the Los Angeles River Backbone Alignment Alternative to Pure Water. The reduction in required construction would incrementally reduce the less-than-significant impacts associated with seismic hazards, geologic instability, expansive soils, erosion, and loss of topsoil that would occur under Pure Water. Potential impacts to paleontological resources also would be incrementally reduced. Similar to Pure Water, the Los Angeles River Backbone Alignment Alternative's impacts to paleontological resources would be potentially significant, but reduced to below a level of significance through the implementation of required mitigation measures.

Greenhouse Gas Emissions

Construction of the Los Angeles River Backbone Alignment Alternative would involve the same types of construction methods as Pure Water and a similar construction schedule. Therefore, GHG emissions during construction of this alternative would be similar to Pure Water but could be incrementally reduced due to the shorter length of pipeline. Since the same amount of water is being pumped a

similar distance with a similar elevation gain, GHG emissions associated with conveyance of purified water along this alternative alignment would be similar to Pure Water. Under both alternatives, impacts associated with GHG emissions would be less than significant based on consistency with Metropolitan's CAP.

Hazards and Hazardous Materials

Based on the preliminary analysis of alignment alternatives, the Los Angeles River Backbone Alignment Alternative has a potential to encounter an incrementally greater volume of contaminated soils (Metropolitan 2020). Thus, this alternative has the potential to incrementally increase the hazardous materials impacts that would occur in association with Pure Water. As with Pure Water, the environmental commitments identified in Section 5.7, *Hazards and Hazardous Materials*, would reduce these impacts to below a level of significance.

Hydrology and Water Quality

The Los Angeles River Backbone Alignment Alternative also would incrementally reduce impacts from construction of the backbone pipeline through a reduction in the total length of pipeline construction. Thus, this alternative would incrementally reduce the less-than-significant impacts related to hydrology and water quality that would result from Pure Water.

Land Use and Planning

Similar to Pure Water, the Los Angeles River Backbone Alignment Alternative would not result in division of an established community because the infrastructure would be located in existing ROWs and on discrete properties that do not currently provide for public access. It also would not result in a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect because both Pure Water and this alternative would be consistent with such policies.

Noise

Construction of the Los Angeles River Backbone Alignment Alternative would involve the same types of construction methods as Pure Water and would occur at similar distances to NSLUs, predominately residences, as Pure Water. Therefore, noise and vibration impacts during construction associated with this alternative would be similar to Pure Water. Also similar to Pure Water, the noise impacts related to construction of the backbone pipeline would be significant and unavoidable, while vibration impacts would be significant but mitigable.

Transportation

The Los Angeles River Backbone Alignment Alternative would involve the same types of construction methods as Pure Water as well as the same operational activities. This alternative would reduce the total length of pipeline construction, which would incrementally reduce the extent of transportation disruption during construction. Thus, this alternative would incrementally reduce the less-than-significant impacts related to transportation that would occur from Pure Water.

Tribal Cultural Resources

Similar to the alignment as proposed, construction of the Los Angeles River Backbone Alignment Alternative would have potential to encounter TCRs due to the setting along the river. In particular, this alignment would be consistent with the alignment of the currently proposed backbone alignment in the vicinity of a known burial site, which the Gabrieleño Band of Mission Indians-Kizh Nation considers to be a massacre site, which holds cultural and tribal value to the Gabrieleño Band of Mission Indians-Kizh Nation. This alternative could, however, incrementally reduce impacts to other TCRs due to the shorter length of the alignment. Nonetheless, similar to Pure Water, a potentially significant and unavoidable impact to TCRs has the potential to occur.

9.4.6.3 Conclusion

The Los Angeles River Backbone Alignment Alternative would incrementally reduce but not avoid potentially significant and unavoidable impacts to cultural resources and TCRs. Impacts to air quality and noise would be significant and unavoidable, as with Pure Water.

This alternative also would reduce but not avoid significant, but mitigable, impacts to sensitive biological resources and geology and soils (paleontological resources), as well as less-than-significant impacts related to energy, GHGs, hydrology and water quality, and transportation. It would have the potential to incrementally increase impacts related to hazards and hazardous materials but impacts under both this alternative and Pure Water would remain less than significant. Impacts related to land use and planning would be less than significant, as with Pure Water.

The Los Angeles River Backbone Alignment Alternative would serve all the same functions as Pure Water; therefore, it would achieve all the basic program objectives of Pure Water.

9.5 SUMMARY OF ALTERNATIVES AND IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an environmentally superior alternative from amongst the alternatives analyzed in an EIR. To the extent that the No Project Alternative is identified as the environmentally superior alternative, the lead agency must identify which of the other alternatives is environmentally superior. To assist in identifying the environmentally superior alternative, **Table 9-1** summarizes the environmental comparison between Pure Water and the six alternatives. Environmental resource categories for which an alternative would result in reduced impacts relative to Pure Water are indicated with a '-', while environmental resource categories for which an alternative would result in increased impacts are indicated with a '+'.

Table 9-1
COMPARISON OF PURE WATER AND ALTERNATIVE IMPACTS

Environmental Resource Category	Pure Water	No Project Alternative	115-MGD Alternative	Indirect Potable Reuse Only (90-MGD) Alternative	Seven-foot-diameter Pipeline Alternative	Northern Pipeline Re-route Alternative	Los Angeles River Backbone Alignment Alternative
Air Quality	SU*	N	SU*-	SU*-	SU*+	SU*	SU*
Biological Resources	SM	N	SM-	SM-	SM-	SM-	SM-
Cultural Resources	SU	N	SU-	SU-	SU	SU-	SU-
Energy	N	N	N-	N-	N+	N	N-
Geology and Soils (Paleontological Resources)	SM	N	SM-	SM-	SM	SM	SM-
Greenhouse Gas Emissions	N	N	N-	N-	N+	N	N-
Hazards and Hazardous Materials	N	N	N-	N-	N-	N+	N+
Hydrology and Water Quality	N	N	N-	N-	N	N	N-
Land Use and Planning	N	N	N	N	N	N	N
Noise	SU*	N	SU*-	SU*-	SU*+	SU*+	SU*
Transportation	N	N	N-	N-	N+	N+	N-
Tribal Cultural Resources	SU	N	SU-	SU-	SU	SU	SU-

SM = significant but mitigable impacts
SU = significant and unavoidable impacts
SU* = Significant and unavoidable impact during construction only
N = no significant impacts
– = reduced impact level(s) relative to Pure Water as proposed
+ = increased impact level(s) relative to Pure Water as proposed

Based on this analysis, the No Project Alternative is identified as the environmentally superior alternative. The No Project Alternative would avoid potentially significant and unavoidable impacts to air quality, cultural resources, noise, and tribal cultural resources, as well as significant but mitigable impacts to biological resources and geology and soils (paleontological resources), which would occur as a result of Pure Water. However, as discussed above, the No Project Alternative would require the development of alternative supplies, which likely would result in its own set of environmental impacts and concerns. Finally, the No Project Alternative does not meet the purpose and objectives of Pure Water, as discussed above.

Of the remaining alternatives, the environmentally superior alternative is the Indirect Potable Reuse Only (90-MGD) Alternative. By reducing the extent of Pure Water facility and component construction, as well as the magnitude of facility operations, this alternative would reduce potentially significant and unavoidable impacts related to air quality, cultural resources, noise, and tribal cultural resources, as well as significant but mitigable impacts to biological and geology and soils (paleontological resources) impacts related to Pure Water. The reduction in impacts would, however, be incremental, and this alternative would not fully avoid any of the identified significant impacts. It should also be noted that this alternative would achieve the basic program objectives, but to a lesser degree because less purified water would be produced and distributed. In particular, this alternative would not maximize beneficial reuse of wastewater that would otherwise be discharged to the ocean (Objective 4) and would not further statewide goals of increasing use of recycled water as a sustainable, environmentally sound water source for both indirect and direct potable reuse (Objective 5).

The Northern Pipeline Re-route Alternative would be a secondary environmentally superior alternative. As compared to Pure Water, its significant and unavoidable impacts to air quality and Tribal Cultural Resources are likely to be similar; its significant and unavoidable impacts to cultural resources are likely to be less; and its significant and unavoidable noise impacts during construction are likely to be slightly worse. Additionally, the Northern Pipeline Re-route Alternative's potentially significant, albeit mitigable, impacts to biological resources would be reduced. This alternative would achieve all the basic program objectives to the same degree as Pure Water.

9.6 REFERENCES

The Metropolitan Water District of Southern California (Metropolitan). 2025. Task Order 11 Priority Area 7 Alternatives Comparison Technical Memorandum. April.

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